

# Arizona State Retirement System Board



## US Fixed Income Asset Class

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August 17, 2007

# Presentation Topics

## **Economic Environment**

### **ASRS Fixed Income Asset Class Review (Aggregate)**

- Asset Class Snapshot

- Mandates Overview

- Risk/Return Bubble Chart

- Overview Risk Parameters

  - Alpha

  - Information Ratio

  - Peer Review

- Positions

  - Sector Allocation

  - Credit Quality

  - Duration

### **ASRS Fixed Income Manager Reviews (Individual)**

- Qualitative Factors: People, Philosophy, Process

- Performance Analysis

  - Alpha

  - Information Ratio

  - Peer Review

- Positions

  - Sector Allocation

  - Credit Quality

  - Duration

# **Economic Environment**

# 10 Year Treasury Yield

July 1, 2006 – August 2, 2007

Despite ending FY 2007 only 11 bps lower than the beginning of the fiscal year, rates traded in a range of almost 90 bps throughout the period.

1<sup>st</sup> half of FY 2007 saw rates move lower on growth concerns and Fed rate cut expectations.

2<sup>nd</sup> half of FY 2007 brought back inflation concerns, leading to higher rates and a steeper yield curve and in general a flight to quality.

Flight-to-quality and repricing of risk as a result of subprime market.



# 10 Year Swap Spreads\*

July 1, 2006 – August 2, 2007

Similar to the level of rates in FY 2007, swap spreads traded in a large 19 basis point range; however, swap spreads rose dramatically in June and July 2007.

1<sup>st</sup> half FY 2007 saw spreads narrow on all spread product in a low volatility, high liquidity, and “reach for yield” environment.

2<sup>nd</sup> half FY 2007 was marked by several flight-to-quality events, mainly concerning the subprime mortgage market, widening spreads from the lows.

Corporate and mortgage spread widening.



Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 920410  
 Hong Kong 852 2977 6000 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2007 Bloomberg L.P.  
 6601-823-3 02-Aug-2007 18:07:17

\*Proxy for the risk premium associated with investing in non-treasury securities.

# **ASRS Fixed Income Asset Class (Aggregate)**

# ASRS Fixed Income Asset Class

## June 30, 2007

Market Value: \$5.6 bb

Passive Percent: 54.7% \*

Target 55%  $\pm$ 20%

Portfolios:

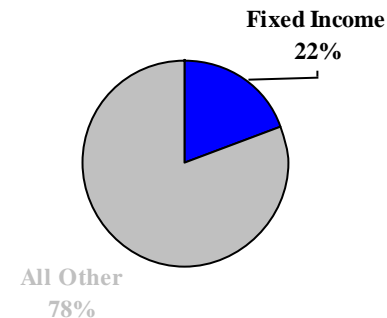
2 Enhanced Passive

3 Active

Average Fee: 7 bps

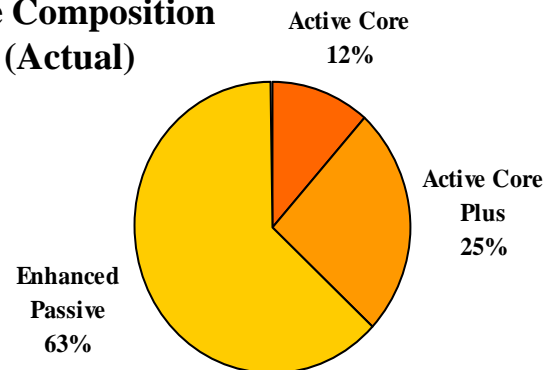
### Total Fund

\$28.05 billion



### Total Fixed Income

Style Composition  
(Actual)



\*Includes GTAA at assumed benchmark allocation.

# ASRS Fixed Income Managers

## Mandates Overview

June 30, 2007

Manager	Style	Benchmark	Inception	Expected Alpha (bp)	Portfolio Assets (\$mil)*	Strategy Assets (\$mil)*
<b>Active</b>						
Blackrock	Core Plus	Leh Agg	11/30/98	80	\$955	\$31,500
Pyramis <sup>#</sup>	Core Plus	Leh Agg	12/31/03	100	461	6,797
JP Morgan	Core	Leh Agg	06/30/87	60	645	11,600
<b>Enhanced Passive</b>						
F2 (Enhanced)	Core	Leh Agg	09/30/00	10	2,231	N/A
BGI (Enhanced)	Core	Leh Agg	09/30/04	10	1,270	39,760

\*as of June 30, 2007

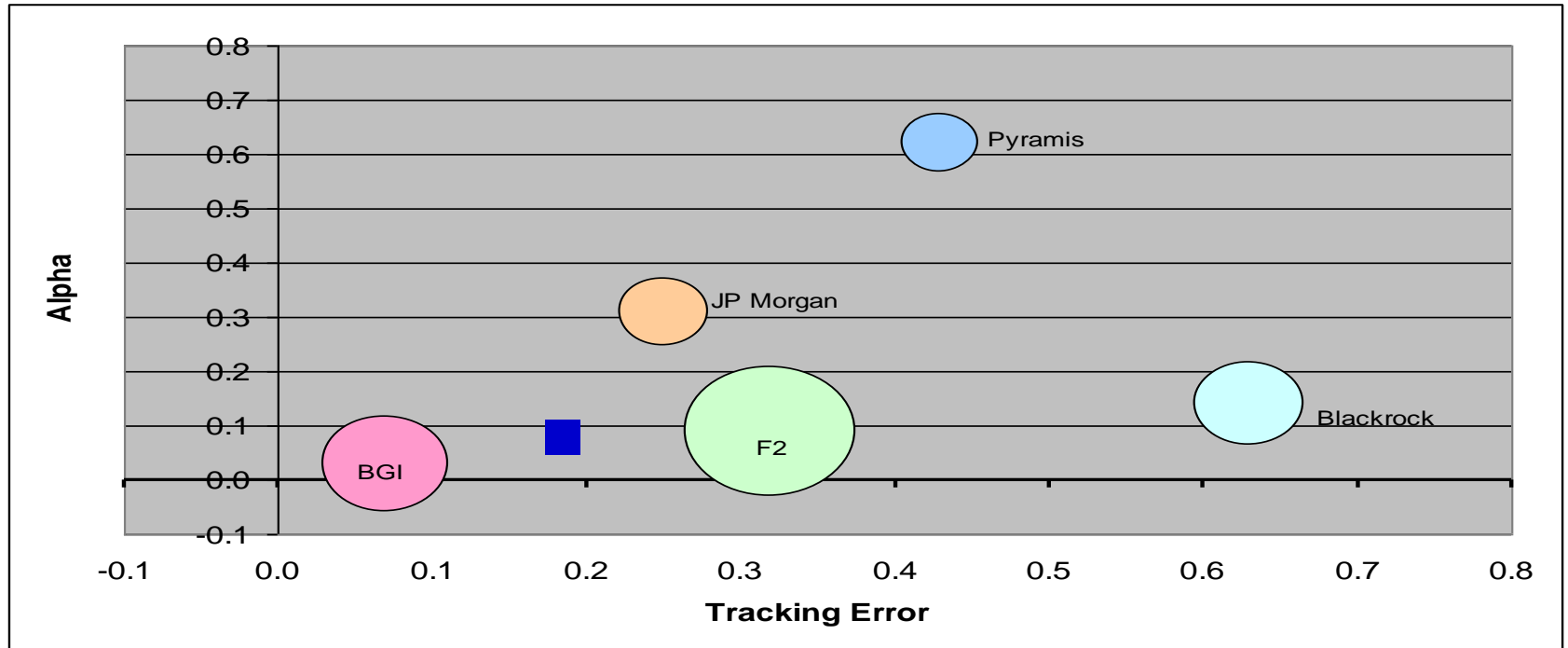
<sup>#</sup> Formerly Fidelity



# Risk/Return Bubble Chart

## ASRS Fixed Income Manager/Asset Class

### For the 5-Year Period Ending June 30, 2007

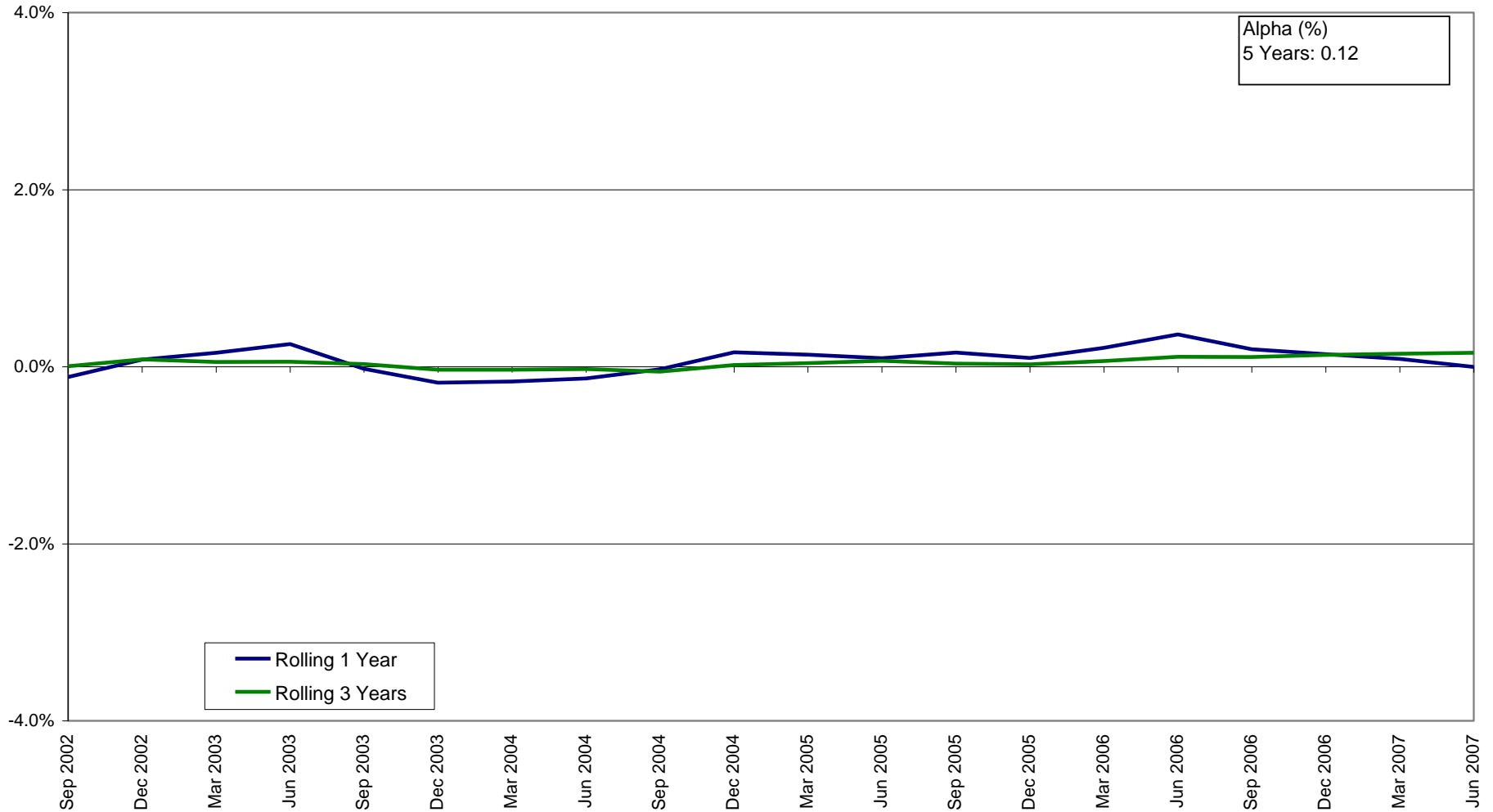


	Manager	Portfolio Size	Inception	Alpha	Tracking Error	Information Ratio
	Blackrock	955.2	11/30/1998	0.14	0.63	0.22
	Pyramis*	461.5	12/31/2003	0.62	0.43	1.44
	JP Morgan	645.3	6/30/1987	0.31	0.25	1.23
	F2	2,231.7	9/30/2000	0.09	0.32	0.26
	BGI	1,270.9	9/30/2004	0.03	0.07	0.40
	<b>Asset Class</b>	<b>\$ 5,566.4</b>	<b>7/1/1975</b>	<b>0.12</b>	<b>0.17</b>	<b>0.66</b>

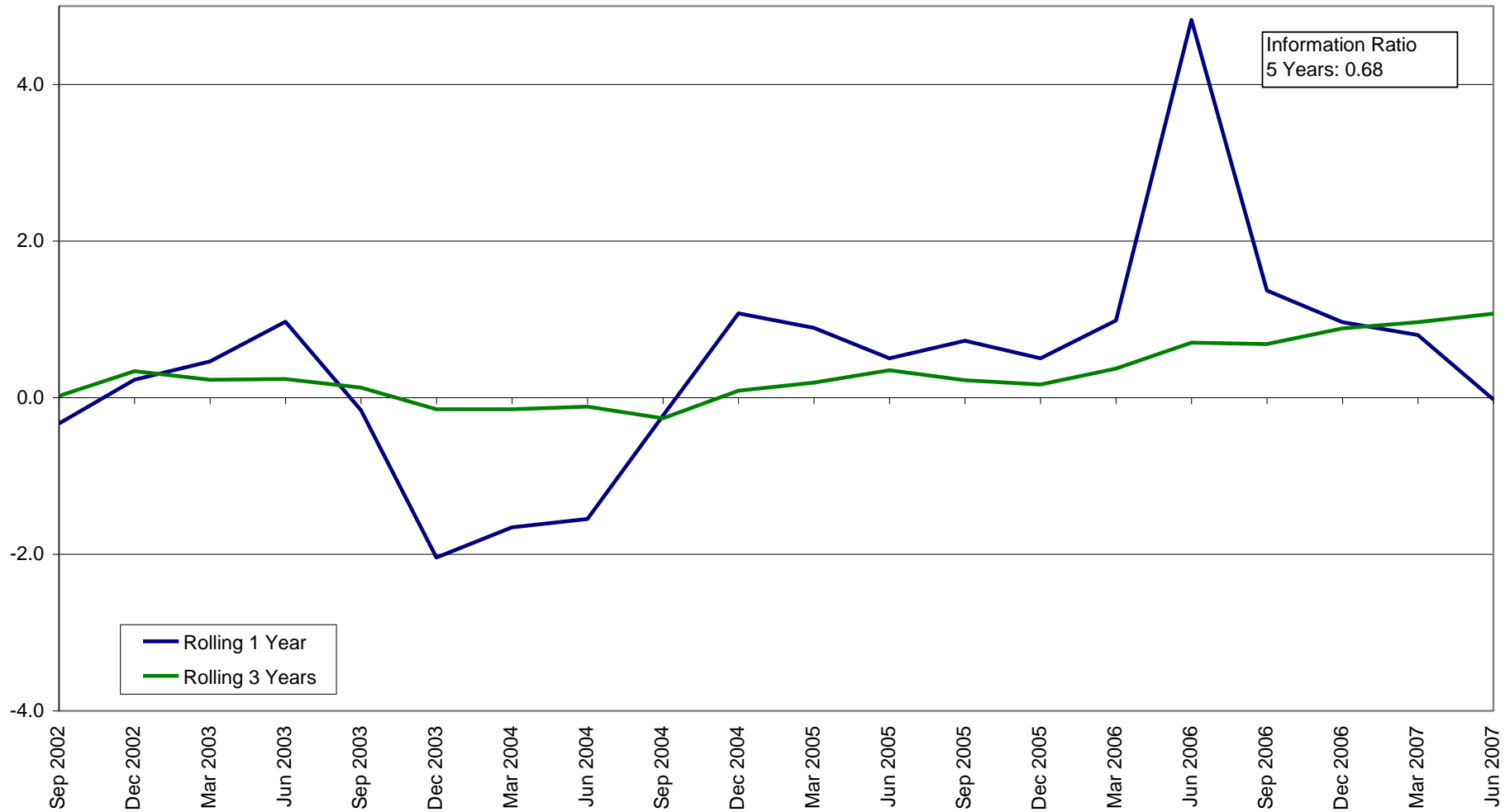
Alpha is Net of Fees

\*Pyramis Risk/Return Calculations for 3.5 years (Inception to Date)

**Alpha**  
**ASRS Fixed Income Asset Class**  
**For the 5–Year Period Ending June 30, 2007**



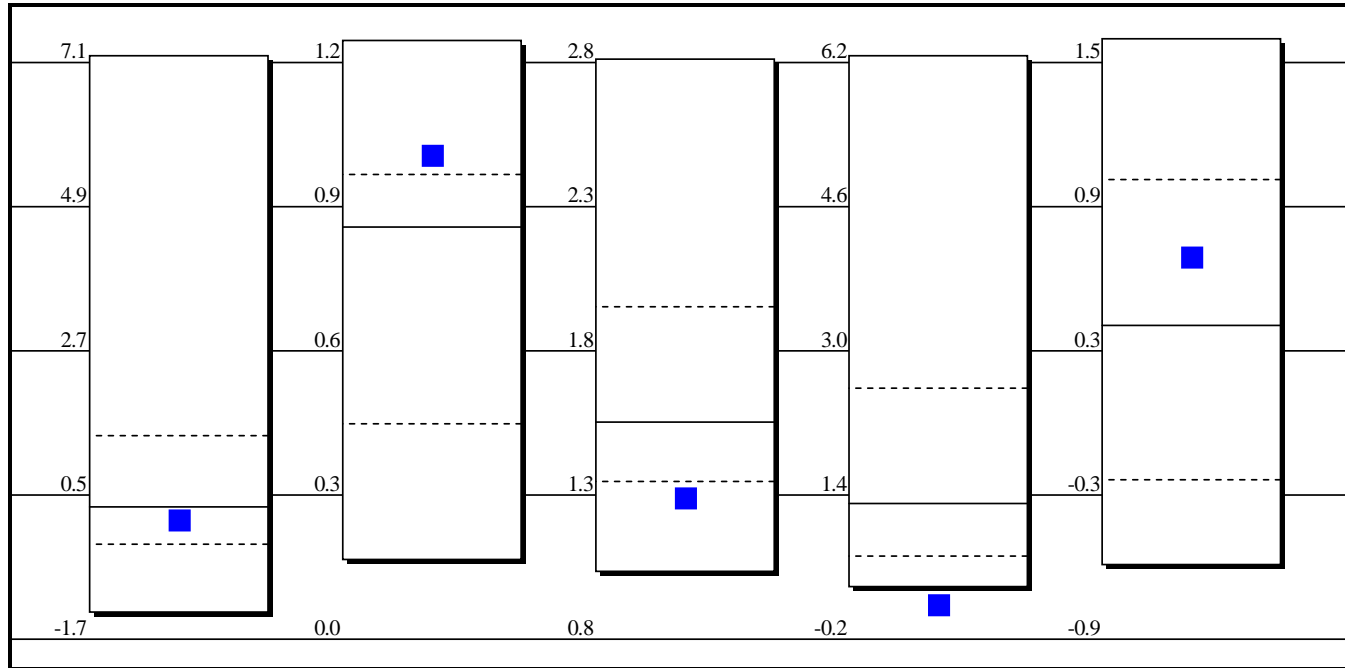
**Information Ratio**  
**ASRS Fixed Income Asset Class**  
**For the 5-Year Period Ending June 30, 2007**



# Peer Comparison with the Mercer US Fixed Combined Universe

## ASRS Fixed Income Asset Class

For the 5-Year Period Ending June 30, 2007

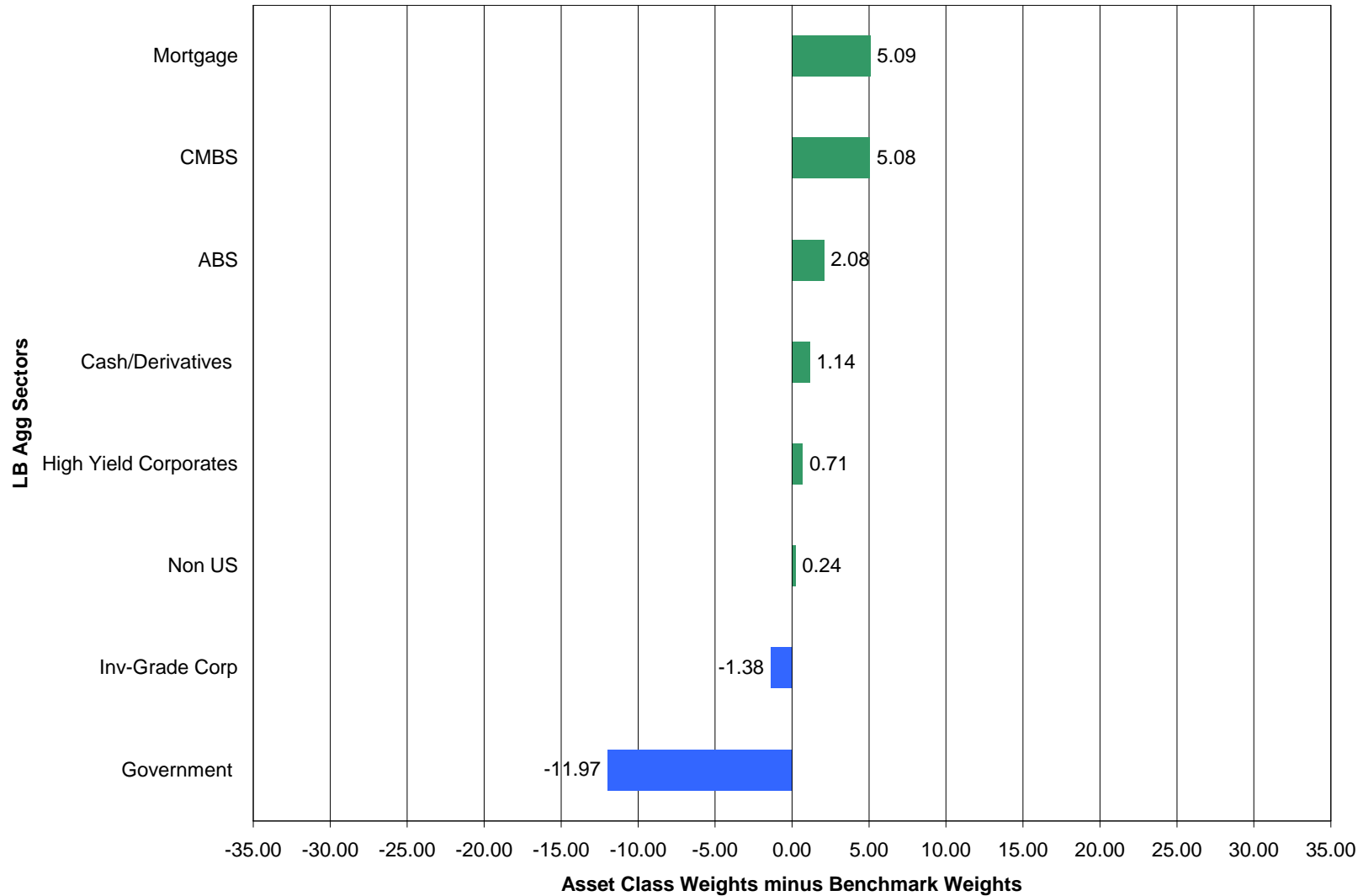


	Excess Return (% pa)	Beta	Reward to Risk	Tracking Error (% pa)	Information Ratio
Total FI	0.12 (59)	1.01 (17)	1.28 (82)	0.17 (100)	0.68 (38)
5th Percentile	7.20	1.24	2.81	6.26	1.60
Upper Quartile	1.39	0.97	1.95	2.57	1.01
Median	0.31	0.86	1.55	1.29	0.40
Lower Quartile	-0.26	0.45	1.34	0.71	-0.24
95th Percentile	-1.30	0.16	1.03	0.36	-0.60
Number of Funds	532	532	532	532	532

# Positions: Portfolio Analysis – Sector Allocation

## ASRS Fixed Income Asset Class

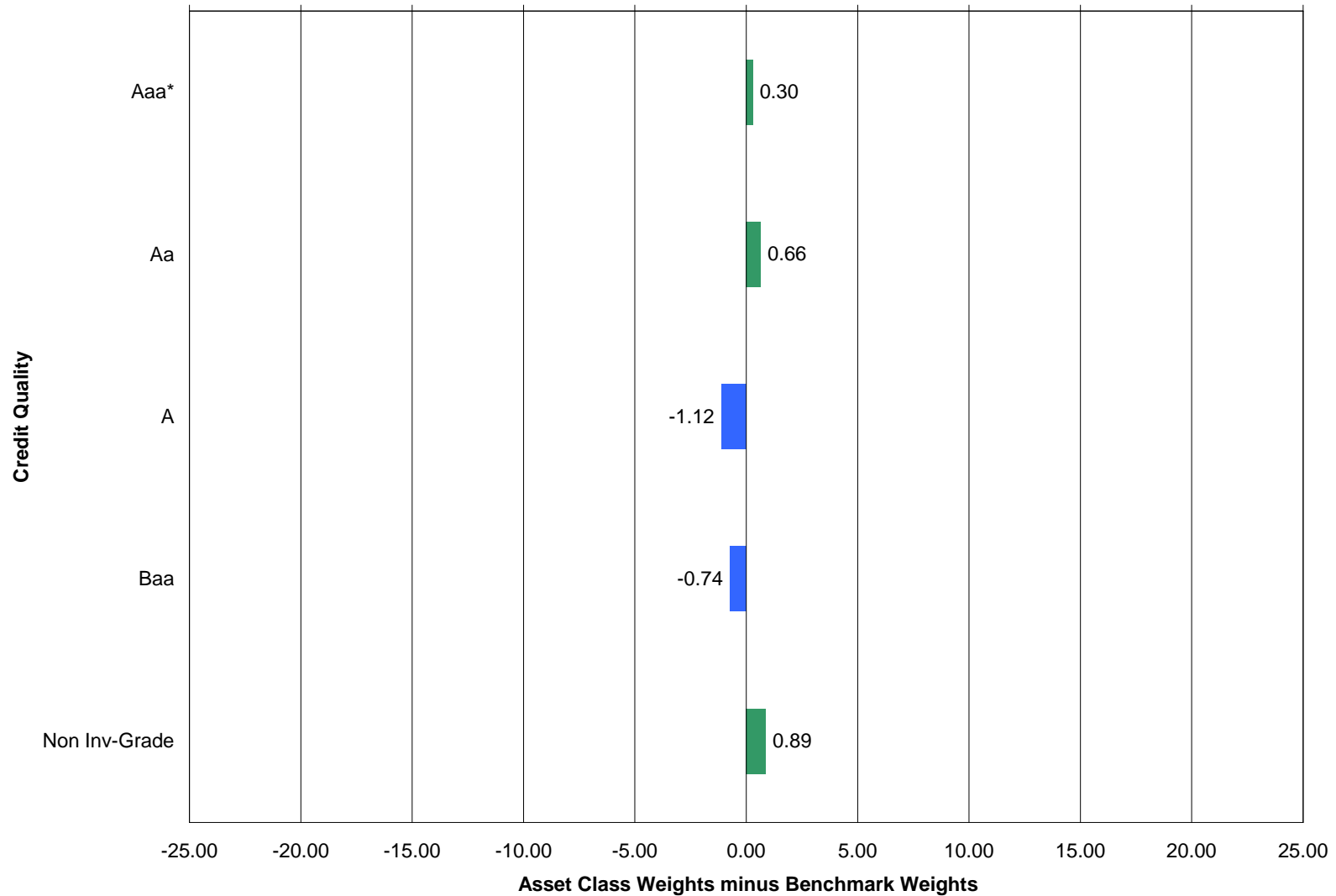
As of June 30, 2007



# Positions: Portfolio Analysis – Credit Quality

## ASRS Fixed Income Asset Class

As of June 30, 2007

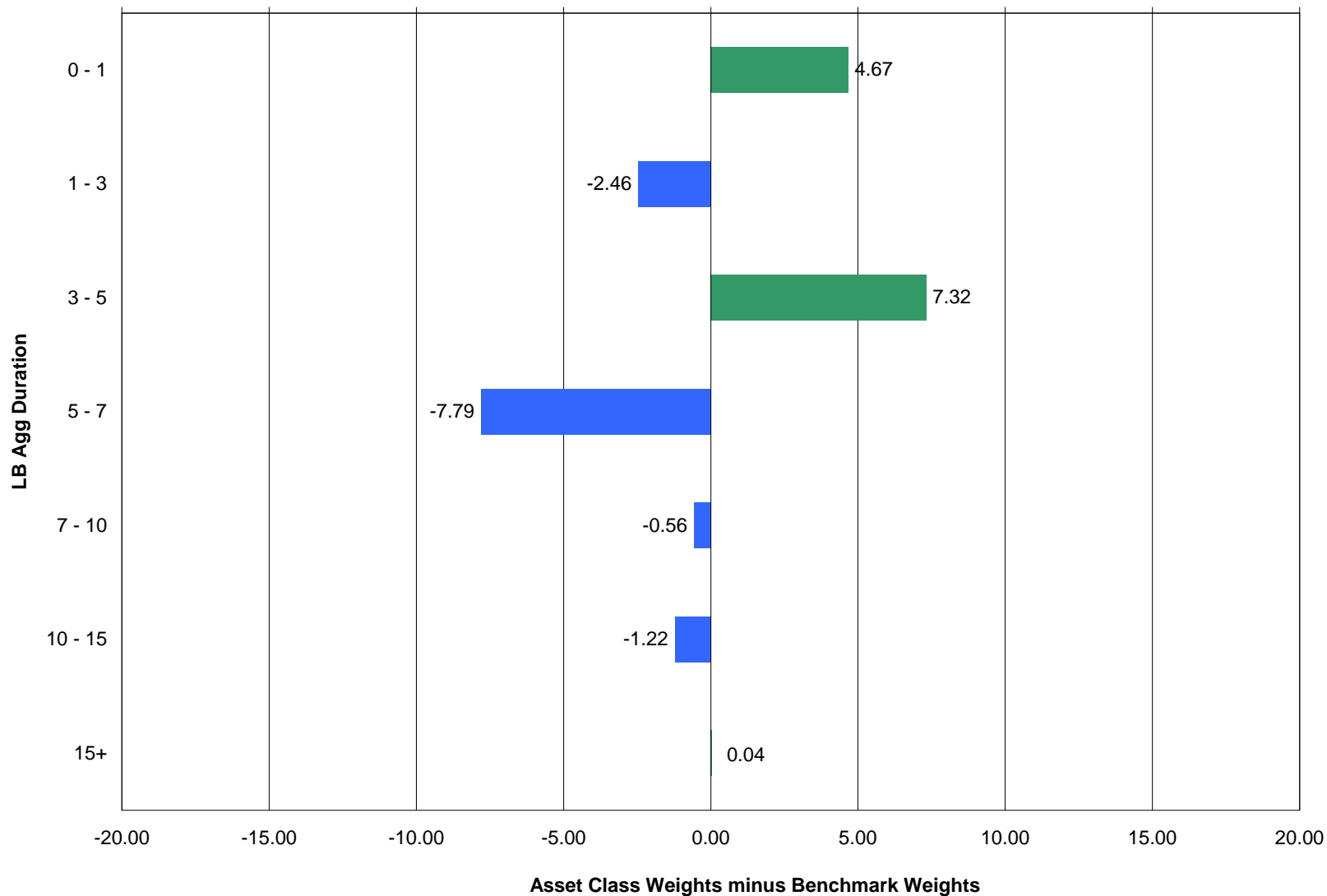


\*Aaa includes corporates, governments, Aaa securitized paper, and cash

# Positions: Portfolio Analysis – Duration Breakdown

## ASRS Fixed Income Asset Class

As of June 30, 2007



# **US Fixed Income Manager Reviews (Individual)**



# BlackRock Investment Management

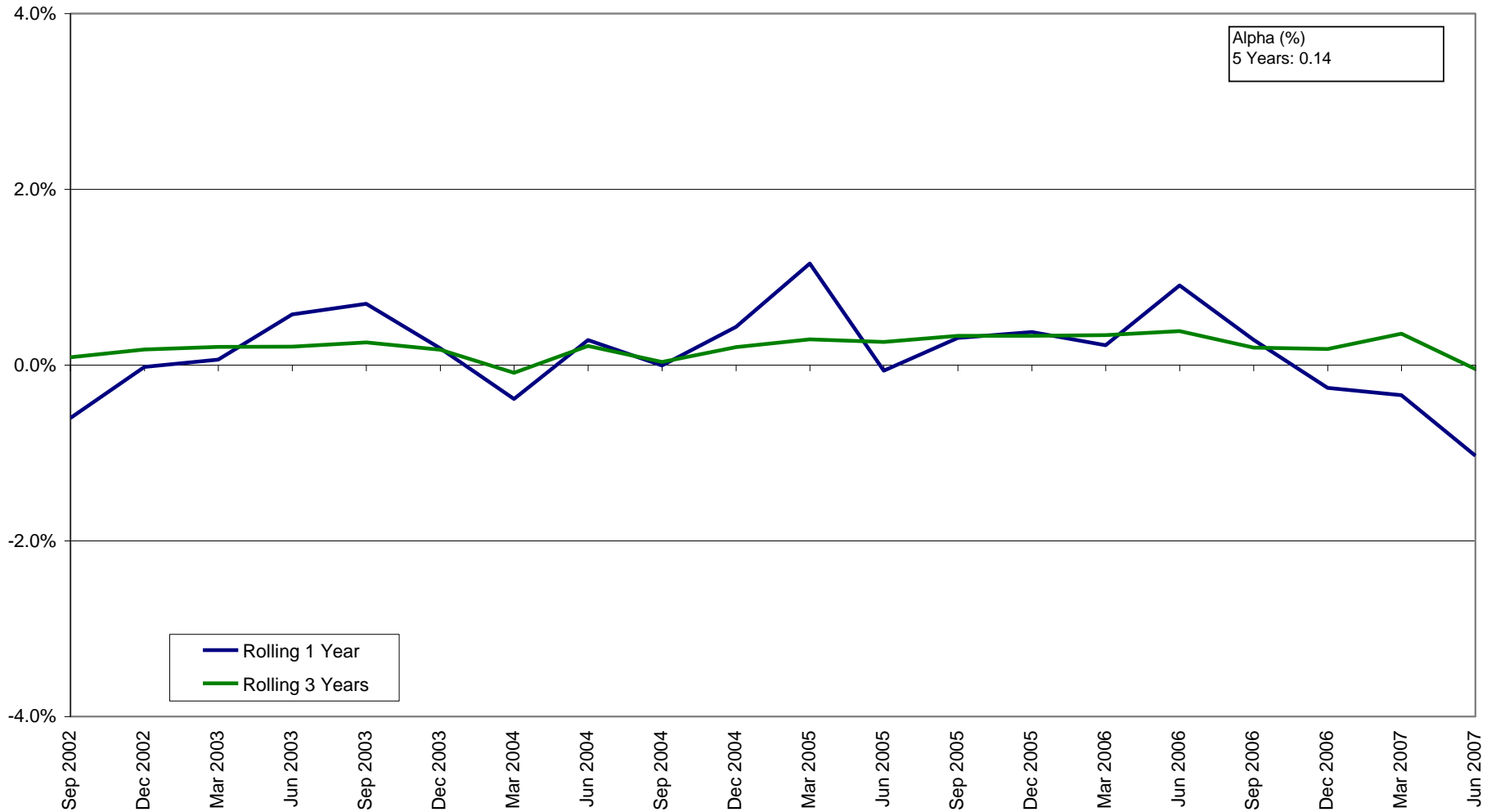
## Qualitative Factors

Factors	Description
People	<p>Team approach to portfolio management, no portfolio is managed exclusively by any single portfolio manager.</p> <p>Acquisition of Merrill Lynch Investment Management Services and Quellos Group a fund-of-funds, increased BlackRock's share in the domestic and international retail markets.</p>
Philosophy	<p>Rigorous Credit Analysis</p> <p>State-of-the-art analytics systems</p> <p>Specialists in High Yield and Investment Grade Corporate Markets</p> <p>BlackRock's philosophy has not changed since the inception of the firm.</p>
Process	<p>BlackRock's Investment Strategy Group (ISG) evaluates macroeconomic trends, fundamental and technical factors to establish a framework for positioning client portfolios.</p> <p>Lead portfolio managers oversee the portfolio construction process for each portfolio.</p> <p>Sector specialists are responsible for the selection of securities taking into consideration the specific objectives and constraints of each portfolio.</p>

# Alpha

## BlackRock Investment Management

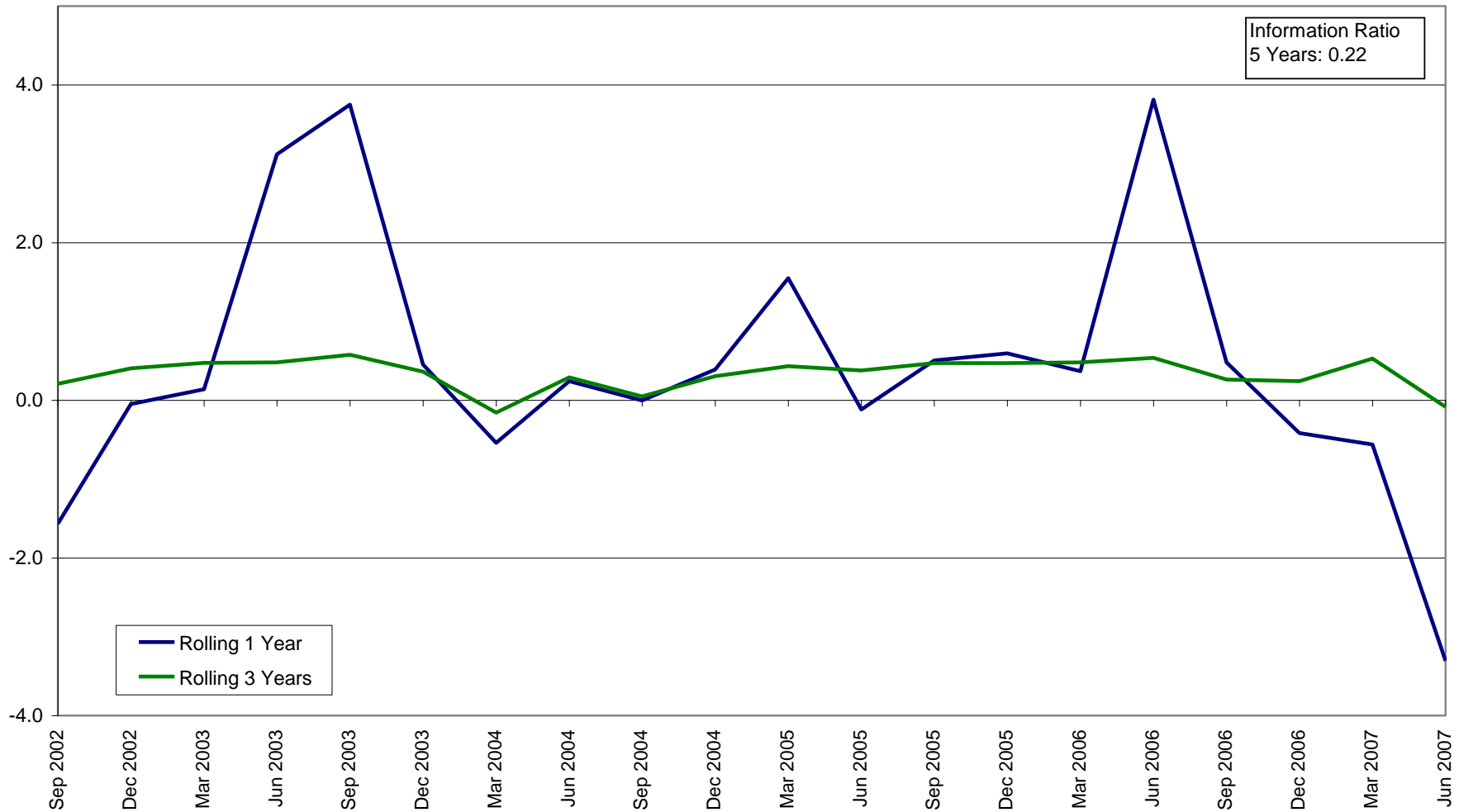
For the 5-Year Period Ending June 30, 2007



# Information Ratio

## BlackRock Investment Management

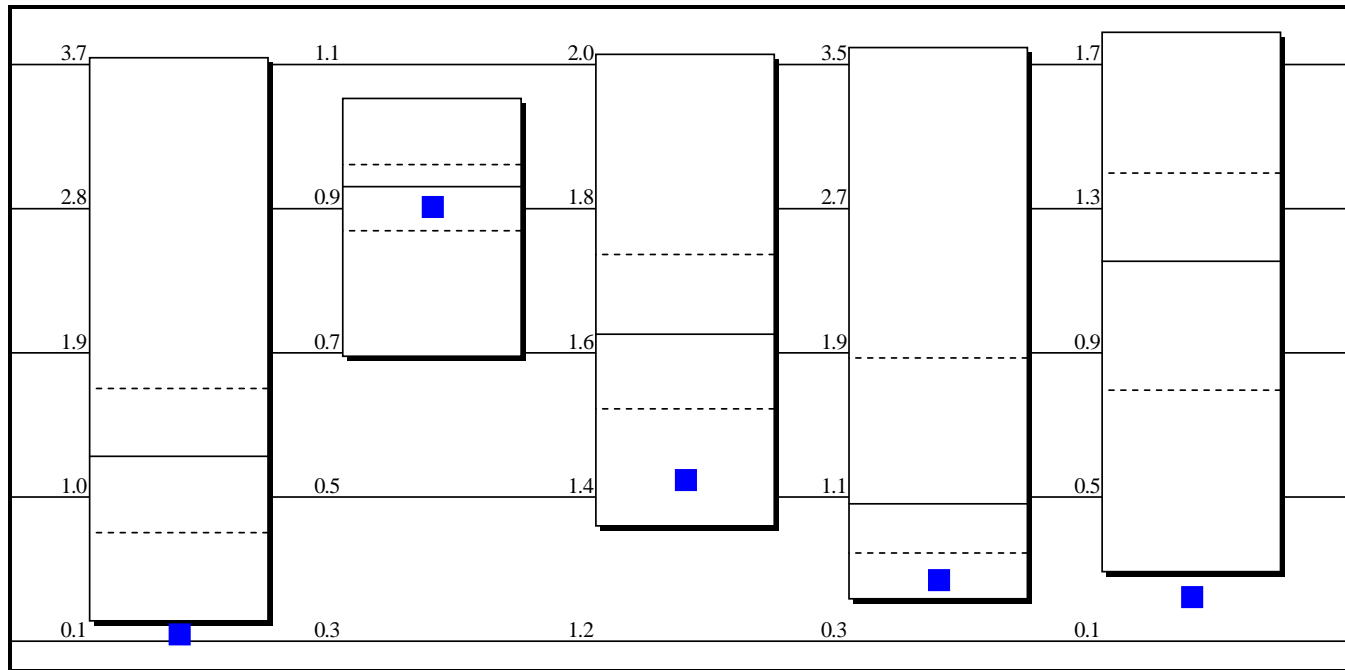
For the 5-Year Period Ending June 30, 2007



# Peer Comparison with the Mercer Fixed Core Opportunistic Universe

## BlackRock Investment Management

For the 5-Year Period Ending June 30, 2007

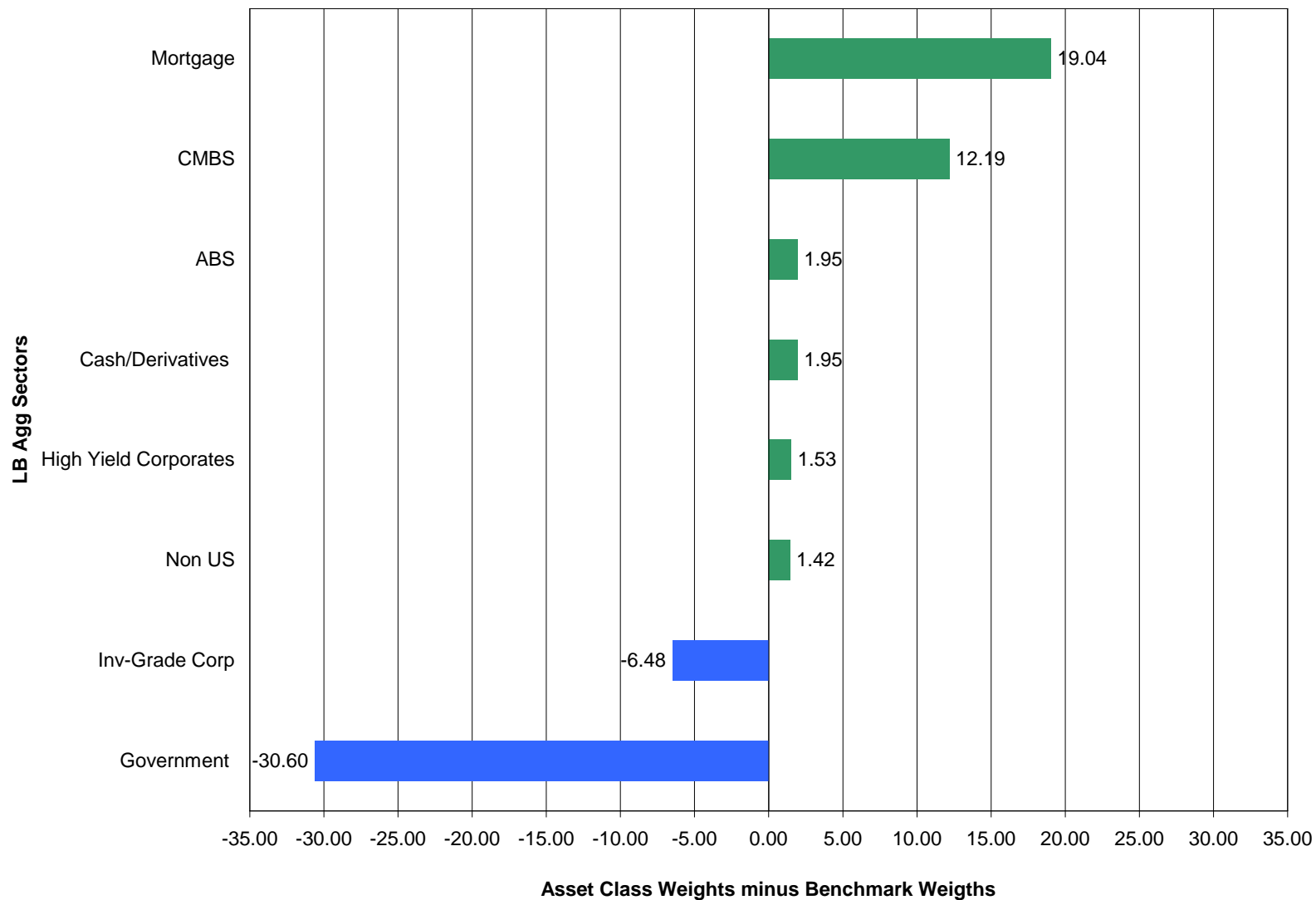


	Excess Return (% pa)	Beta	Reward to Risk	Tracking Error (% pa)	Information Ratio
BlackRock	0.14 (95)	0.90 (64)	1.42 (90)	0.63 (86)	0.22 (97)
5th Percentile	3.74	1.05	2.01	3.59	1.79
Upper Quartile	1.67	0.96	1.74	1.87	1.40
Median	1.25	0.93	1.63	1.06	1.15
Lower Quartile	0.77	0.87	1.52	0.79	0.80
95th Percentile	0.22	0.69	1.36	0.53	0.29
Number of Funds	75	75	75	75	75

# Positions: Portfolio Analysis – Sector Allocation

## BlackRock Investment Management

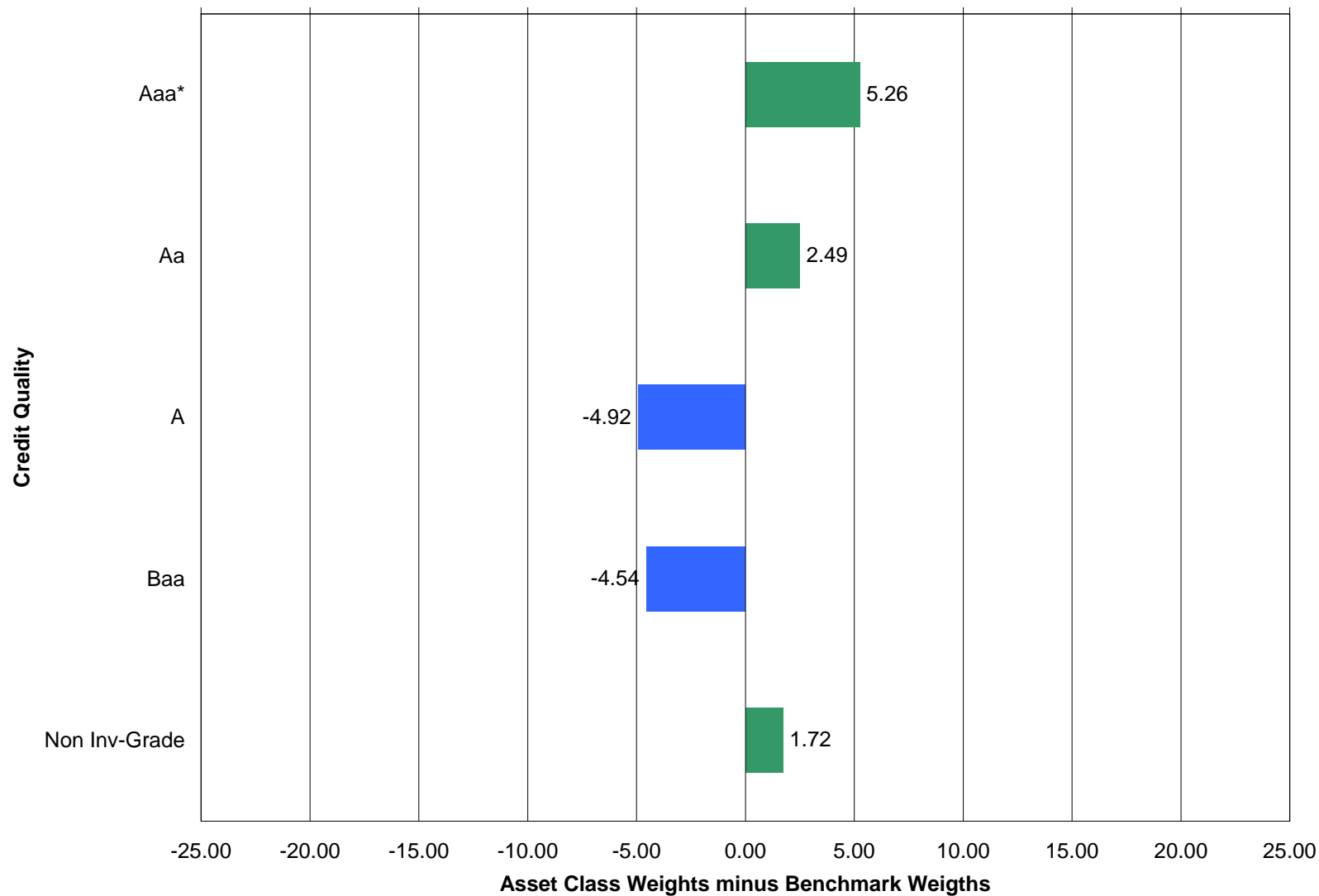
As of June 30, 2007



# Positions: Portfolio Analysis – Credit Quality

## BlackRock Investment Management

As of June 30, 2007

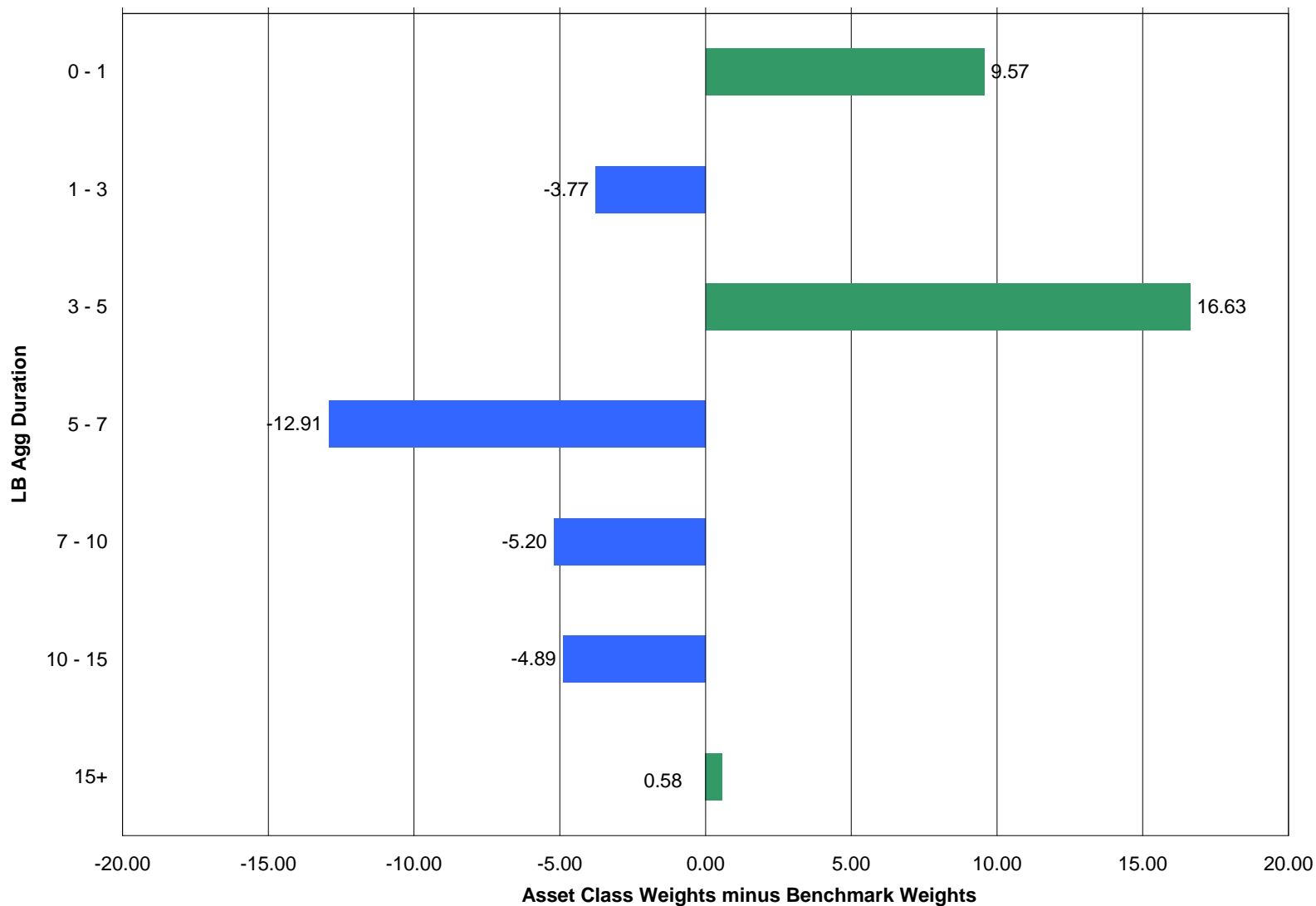


\*Aaa includes corporates, governments, Aaa securitized paper, and cash

# Positions: Portfolio Analysis – Duration Breakdown

## BlackRock Investment Management

As of June 30, 2007



# Pyramis Global Investors

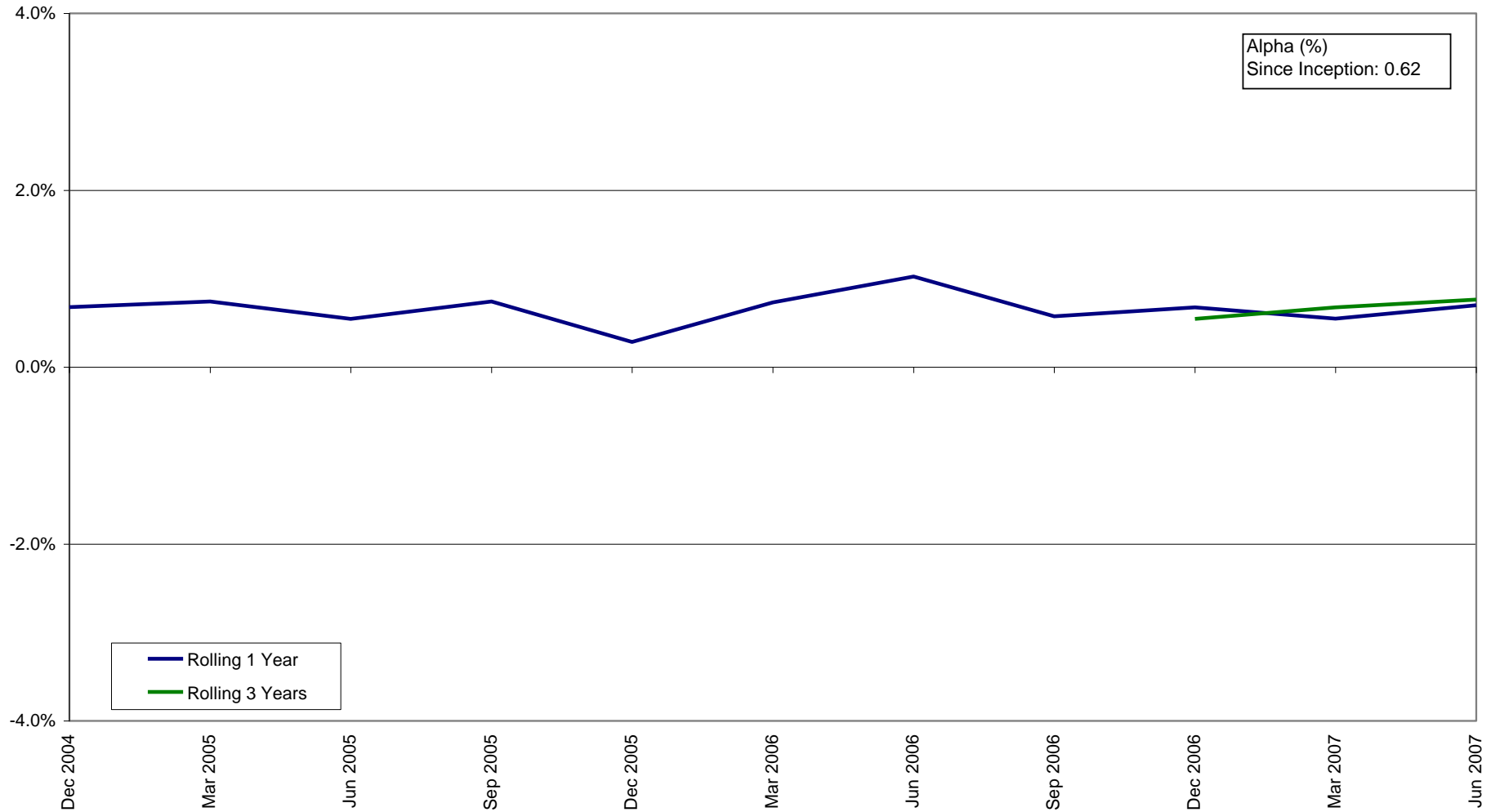
## Qualitative Factors

Factors	Description
People	<p>Portfolio management team led by lead PM and dedicated specialist investment teams from each asset class.</p> <p>Core Plus PM responsible for asset allocation between asset classes and portfolio rebalancing</p> <p>Interaction of PM/analysts/traders to continuously monitor portfolios</p>
Philosophy	<p>Focus on security selection</p> <p>Rigorous credit analysis</p> <p>Specialists in Investment-Grade and High Yield Markets</p>
Process	<p><del>Portfolios constructed based on tactical asset allocation decisions between investment grade and high yield</del></p> <p>asset classes based on client's specific risk/reward objectives.</p> <p>Accounts managed in a pool or separate account vehicle by dedicated investment teams.</p>



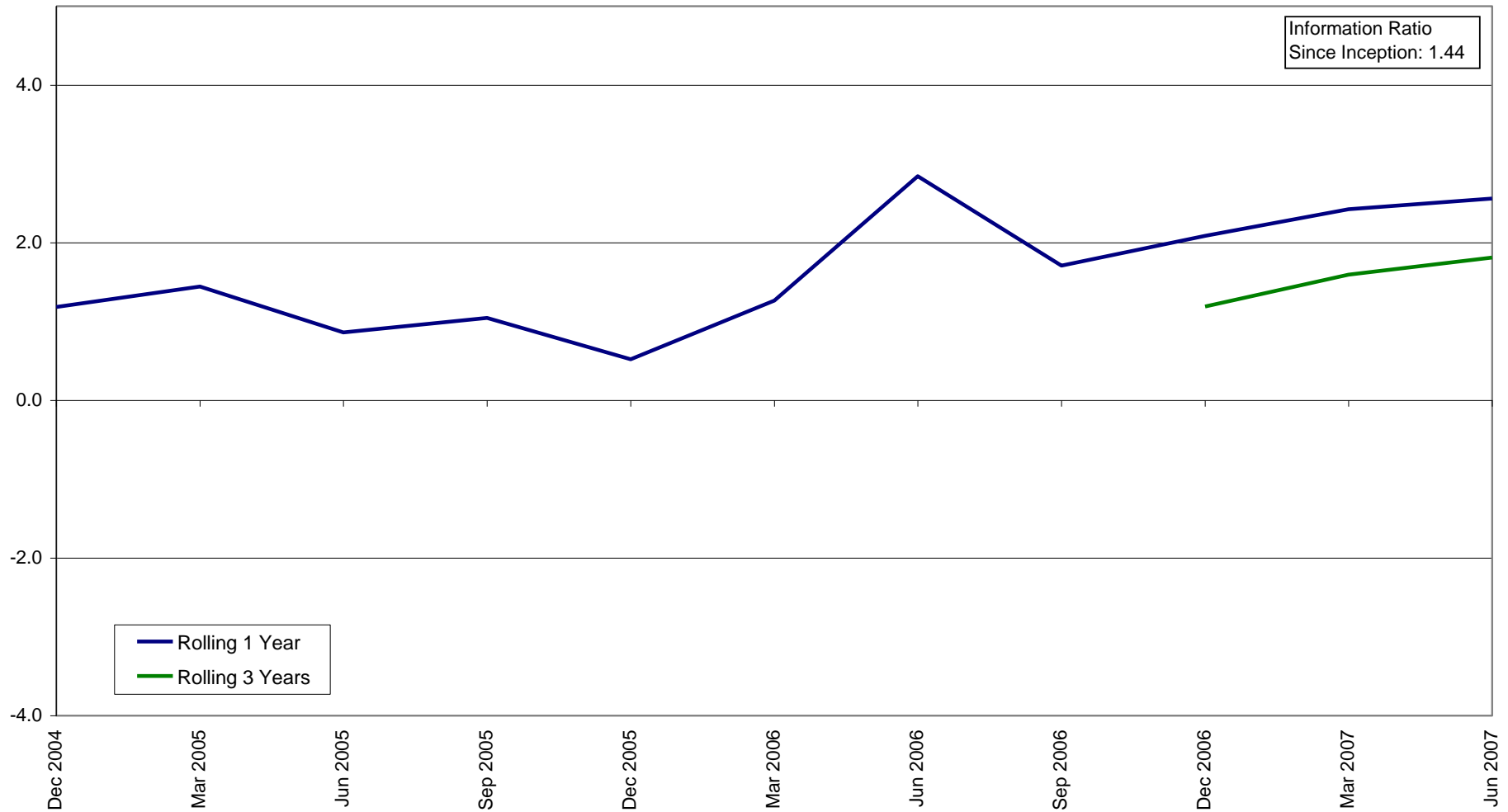
# Alpha Pyramis Global Advisors

Since Inception Period Ending June 30, 2007



# Information Ratio Pyramis Global Advisors

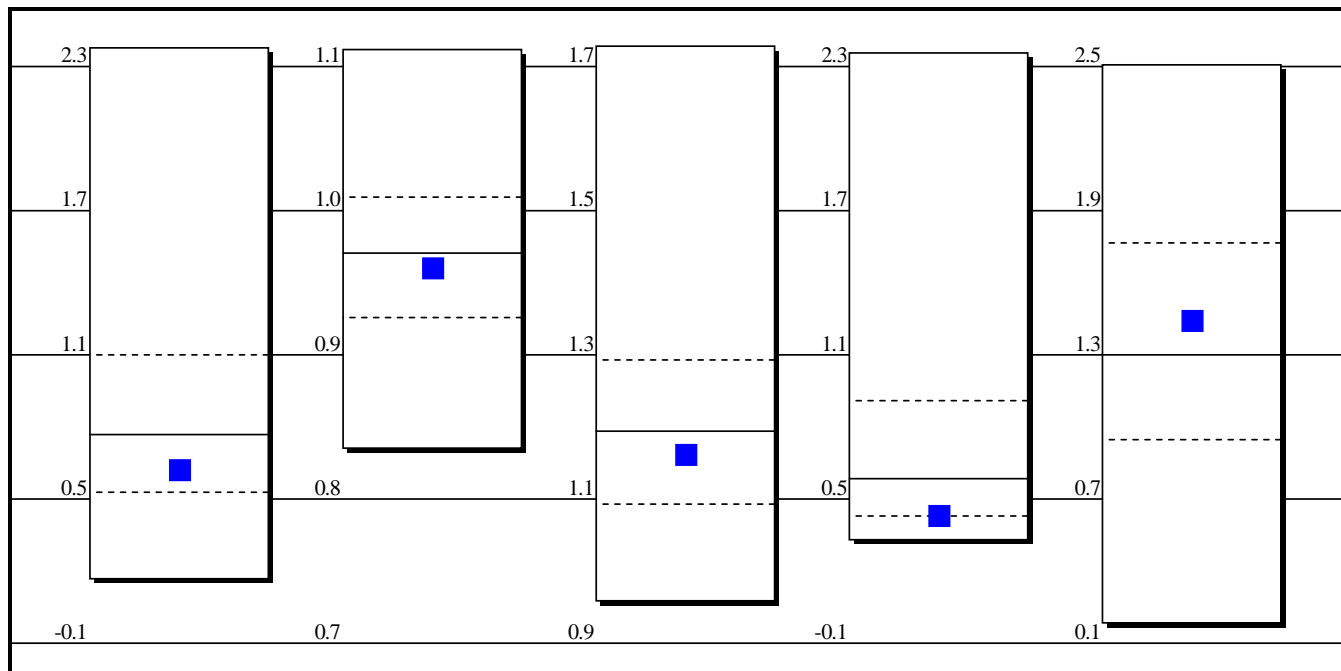
Since Inception Period Ending June 30, 2007



# Peer Comparison with the Mercer Fixed Core Opportunistic Universe

## Pyramis Global Advisors

Since Inception Period Ending June 30, 2007

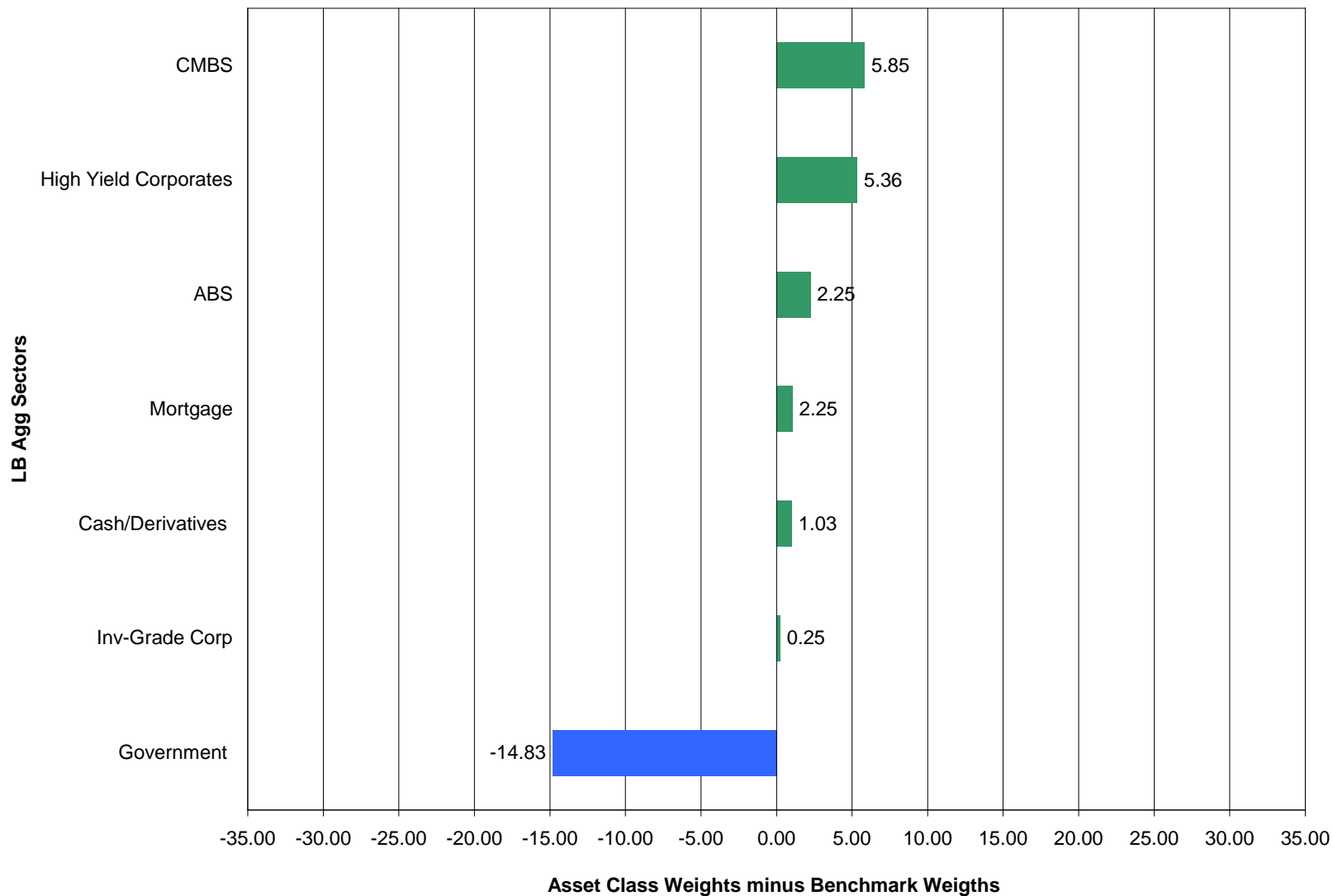


	Excess Return (% pa)	Beta	Reward to Risk	Tracking Error (% pa)	Information Ratio
Pyramis <span style="color: blue;">■</span>	0.62 (66)	0.96 (52)	1.16 (59)	0.43 (74)	1.44 (43)
5th Percentile	2.38	1.11	1.73	2.35	2.50
Upper Quartile	1.10	1.01	1.29	0.90	1.76
Median	0.77	0.97	1.19	0.58	1.30
Lower Quartile	0.53	0.93	1.09	0.43	0.95
95th Percentile	0.17	0.83	0.96	0.33	0.18
Number of Funds	79	79	79	79	79

# Positions: Portfolio Analysis – Sector Allocation

## Pyramis Global Advisors

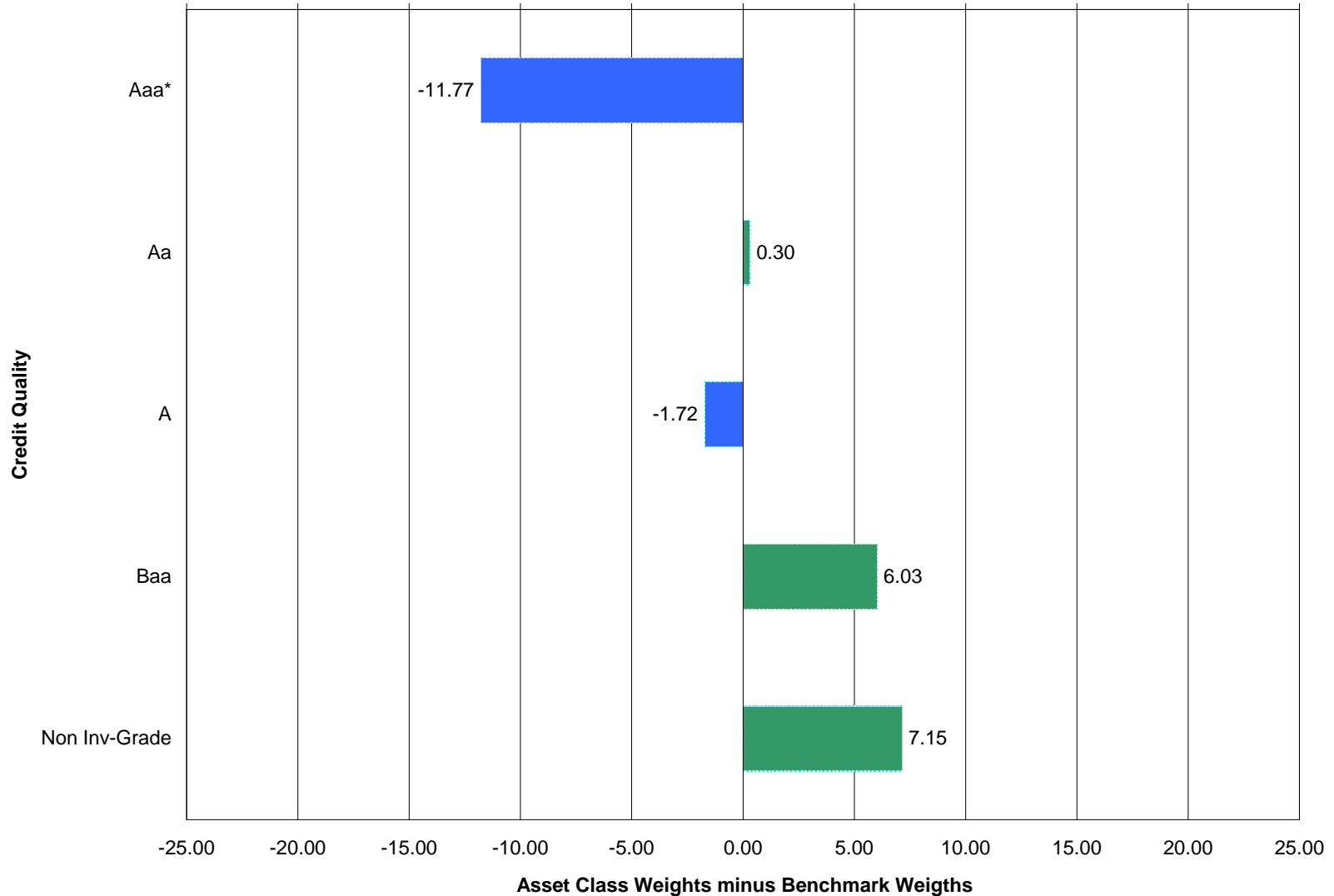
As of June 30, 2007



# Positions: Portfolio Analysis – Credit Quality

## Pyramis Global Advisors

As of June 30, 2007

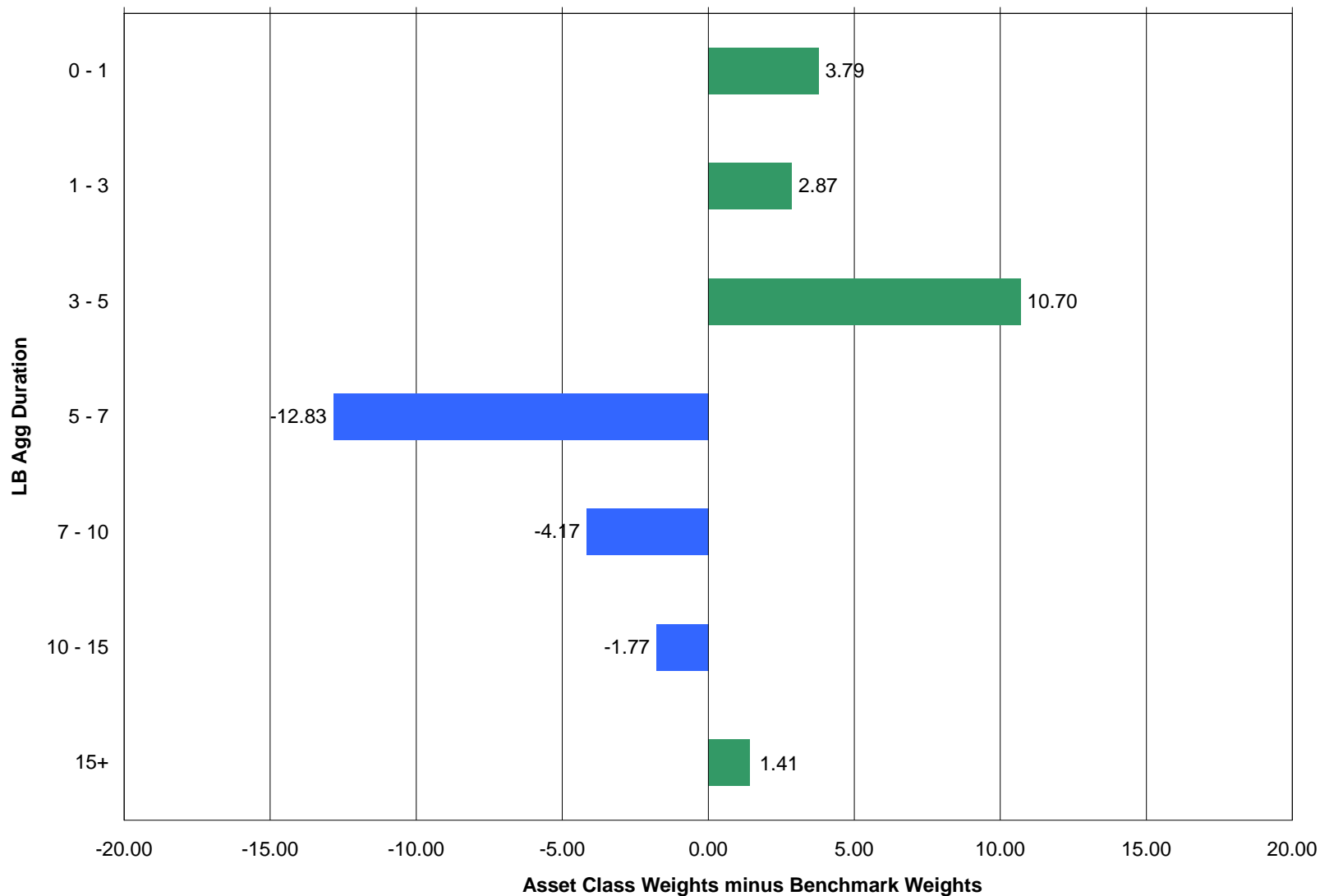


\*Aaa includes corporates, governments, Aaa securitized paper, and cash

# Positions: Portfolio Analysis – Duration Breakdown

Pyramis Global Advisors

As of June 30, 2007



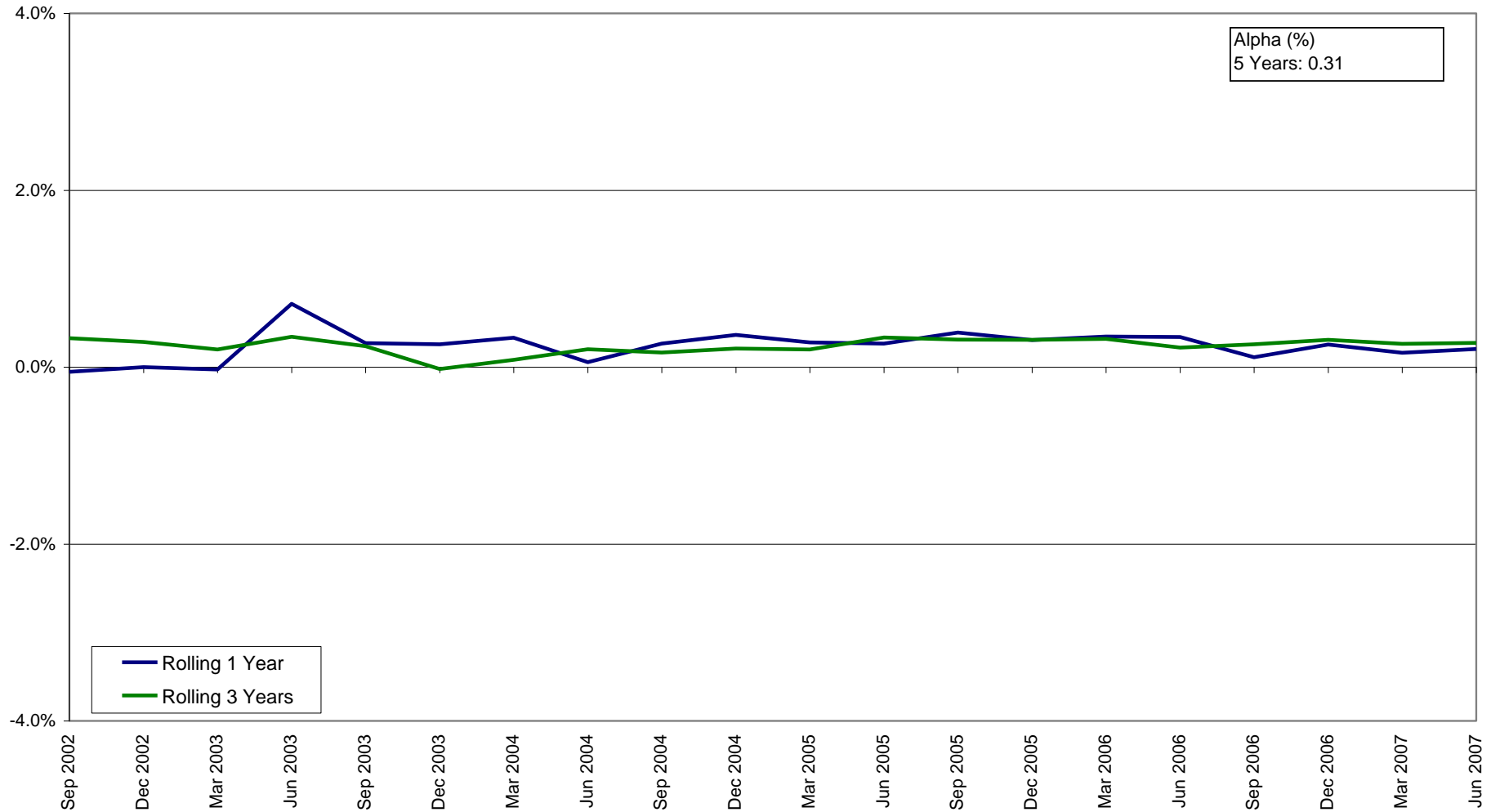
## JP Morgan Asset Management Qualitative Factors

Factors	Description
People	<p>Team-based approach to portfolio management.</p> <p>Proprietary fixed income research analyzes the investment process – from top-down strategy, to security selection, to portfolio construction and risk management .</p>
Philosophy	<p>Focus on security selection</p> <p>Rigorous credit analysis</p> <p>Specialists in Investment-Grade Corporate Markets</p>
Process	<p><del>Formal quarterly strategy sessions to determine firm's wide interest rate and sector portfolio themes across the Fixed income Group for the coming quarters.</del></p> <p>Value added process by establishing sector and duration strategy, and security selection ideas from specialists teams.</p>

# Alpha

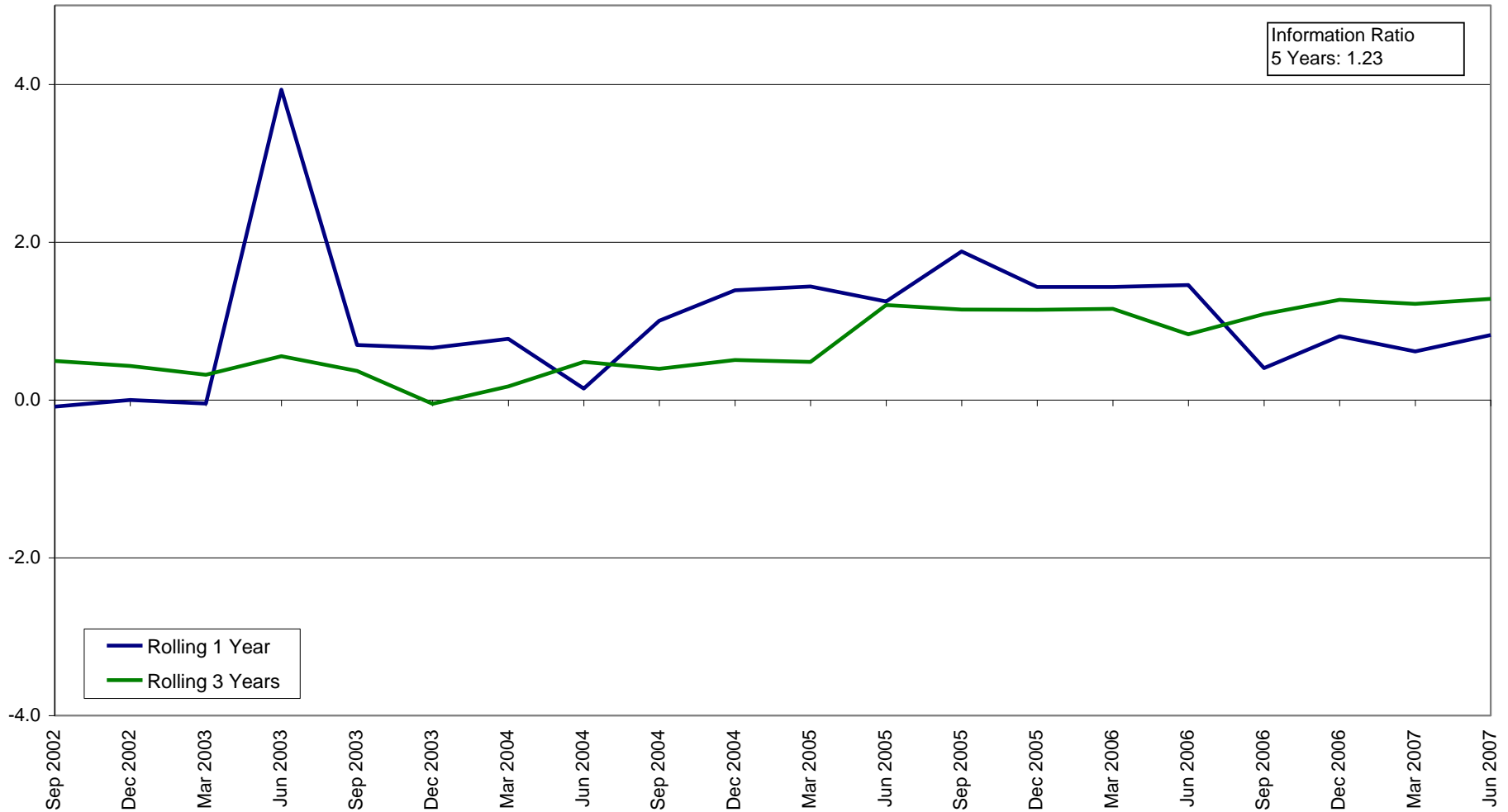
## JP Morgan Asset Management

For the 5-Year Period Ending June 30, 2007





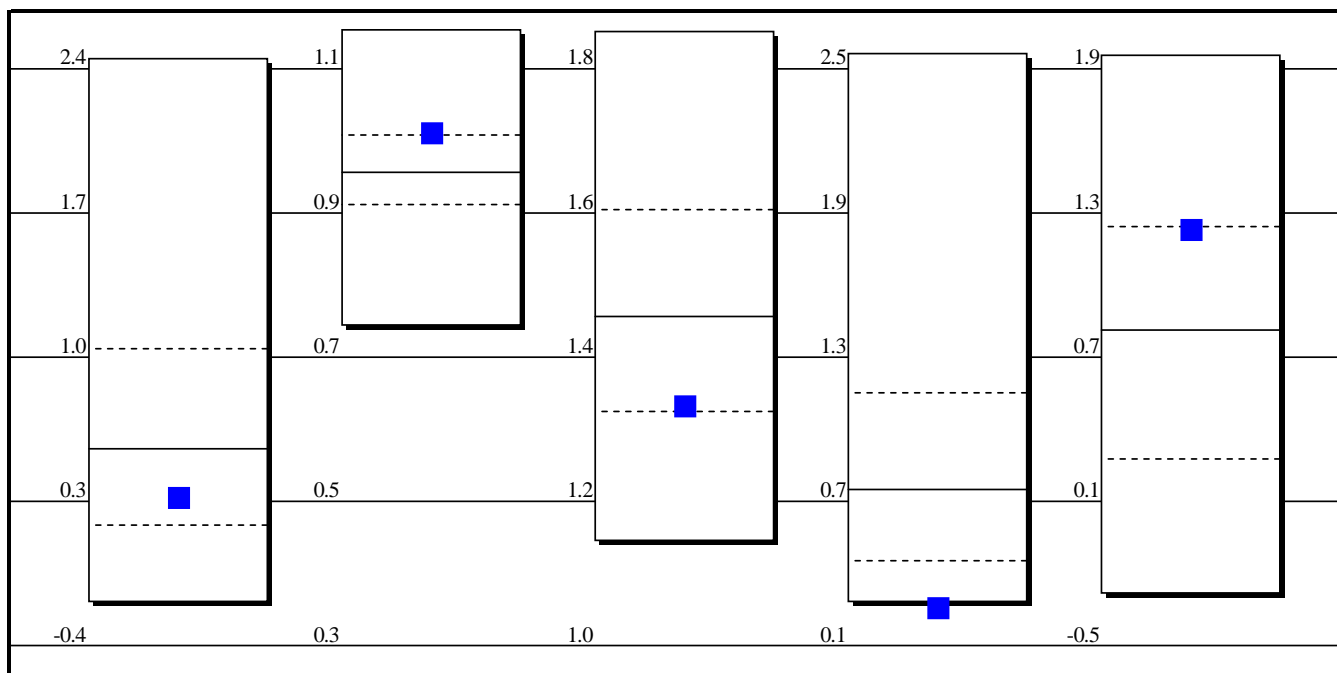
**Information Ratio**  
**JP Morgan Asset Management**  
**For the 5-Year Period Ending June 30, 2007**



# Peer Comparison with the Mercer Fixed Core Universe

## JP Morgan Asset Management

For the 5-Year Period Ending June 30, 2007

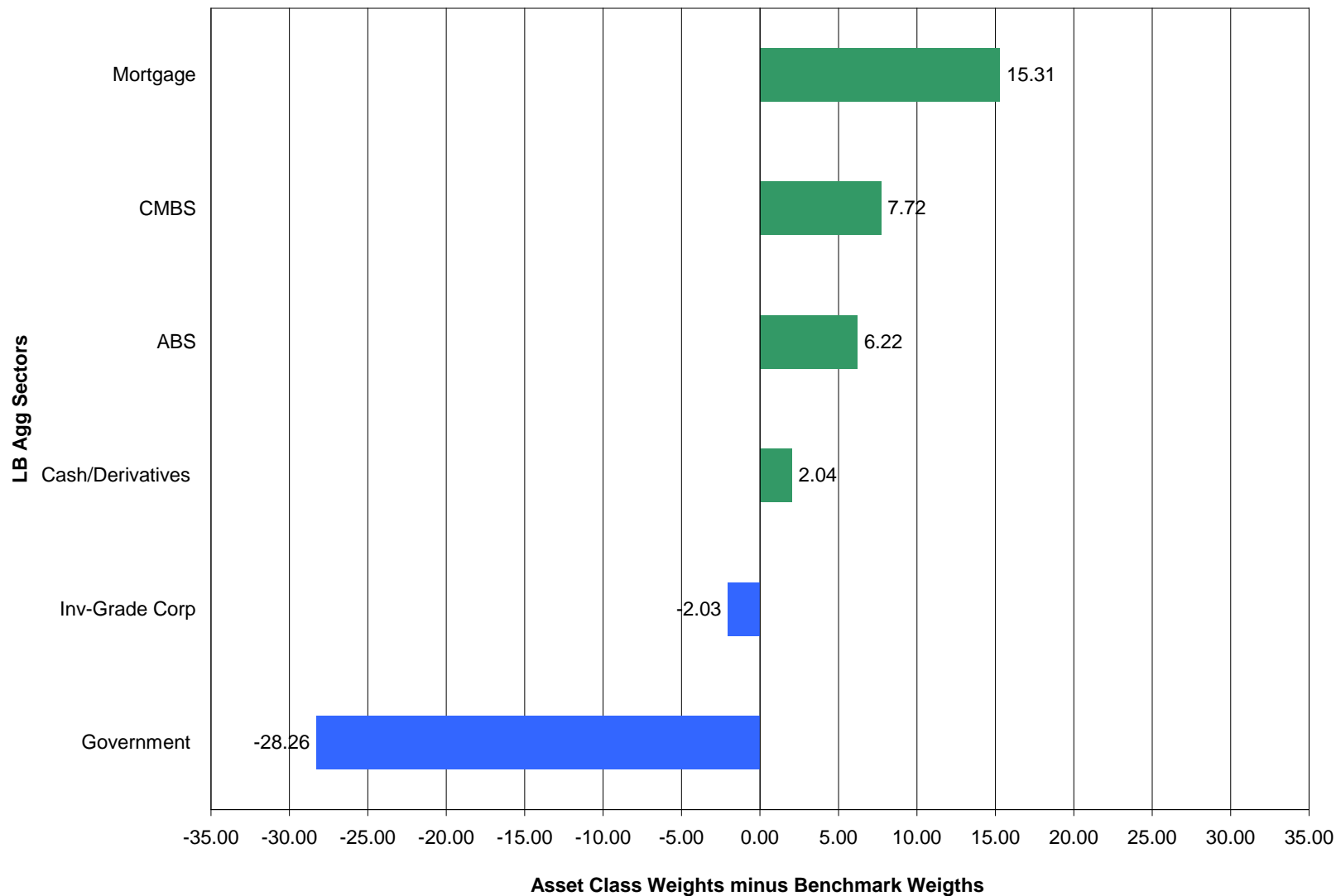


	Excess Return (% pa)	Beta	Reward to Risk	Tracking Error (% pa)	Information Ratio
JPMorgan ■	0.31 (66)	1.01 (23)	1.33 (73)	0.25 (97)	1.23 (26)
5th Percentile	2.45	1.15	1.85	2.56	1.95
Upper Quartile	1.04	1.01	1.60	1.15	1.24
Median	0.55	0.96	1.46	0.75	0.81
Lower Quartile	0.18	0.91	1.32	0.45	0.28
95th Percentile	-0.19	0.74	1.14	0.27	-0.29
Number of Funds	226	226	226	226	226

# Positions: Portfolio Analysis – Sector Allocation

## JP Morgan Asset Management

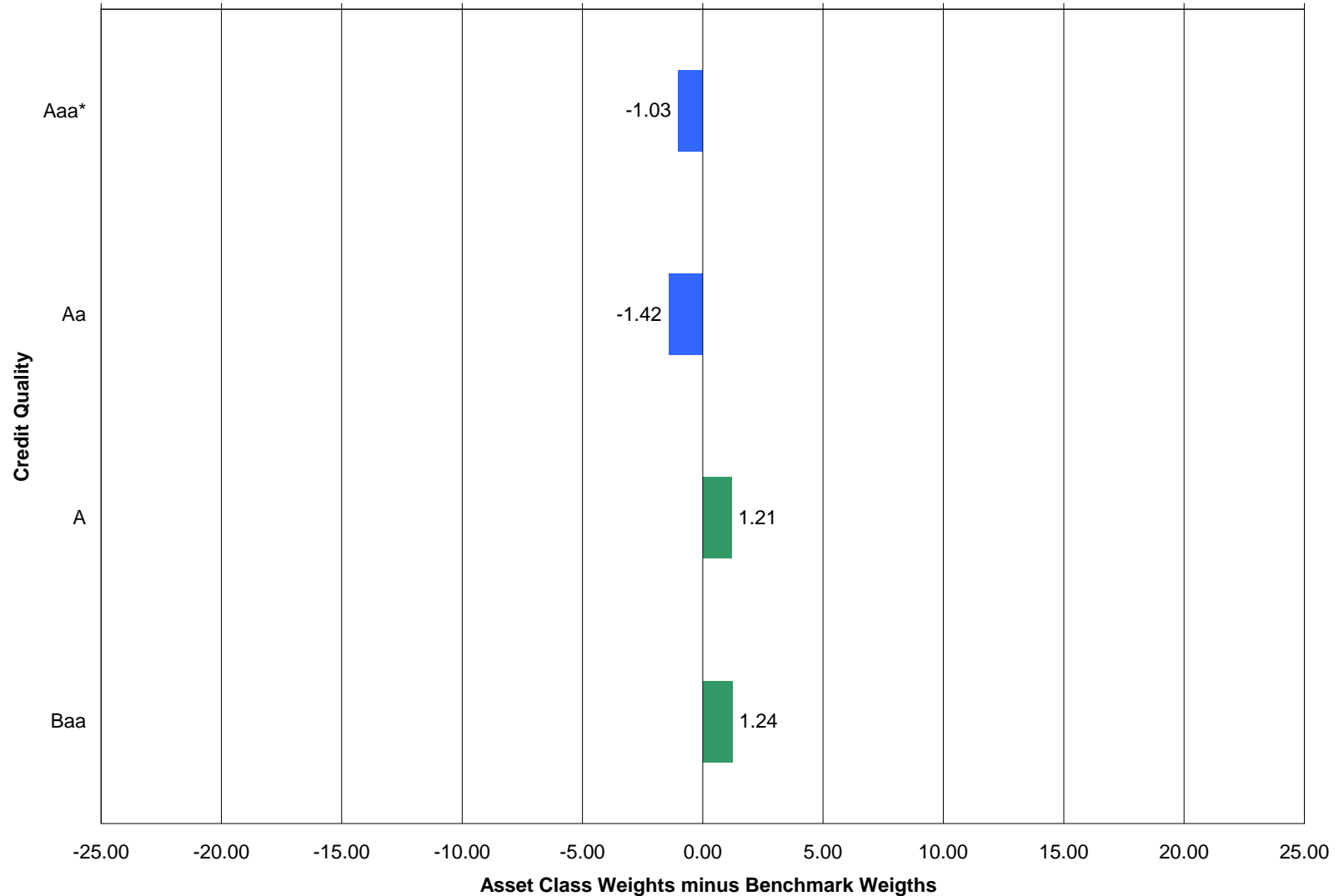
As of June 30, 2007



# Positions: Portfolio Analysis – Credit Quality

## JP Morgan Asset Management

As of June 30, 2007

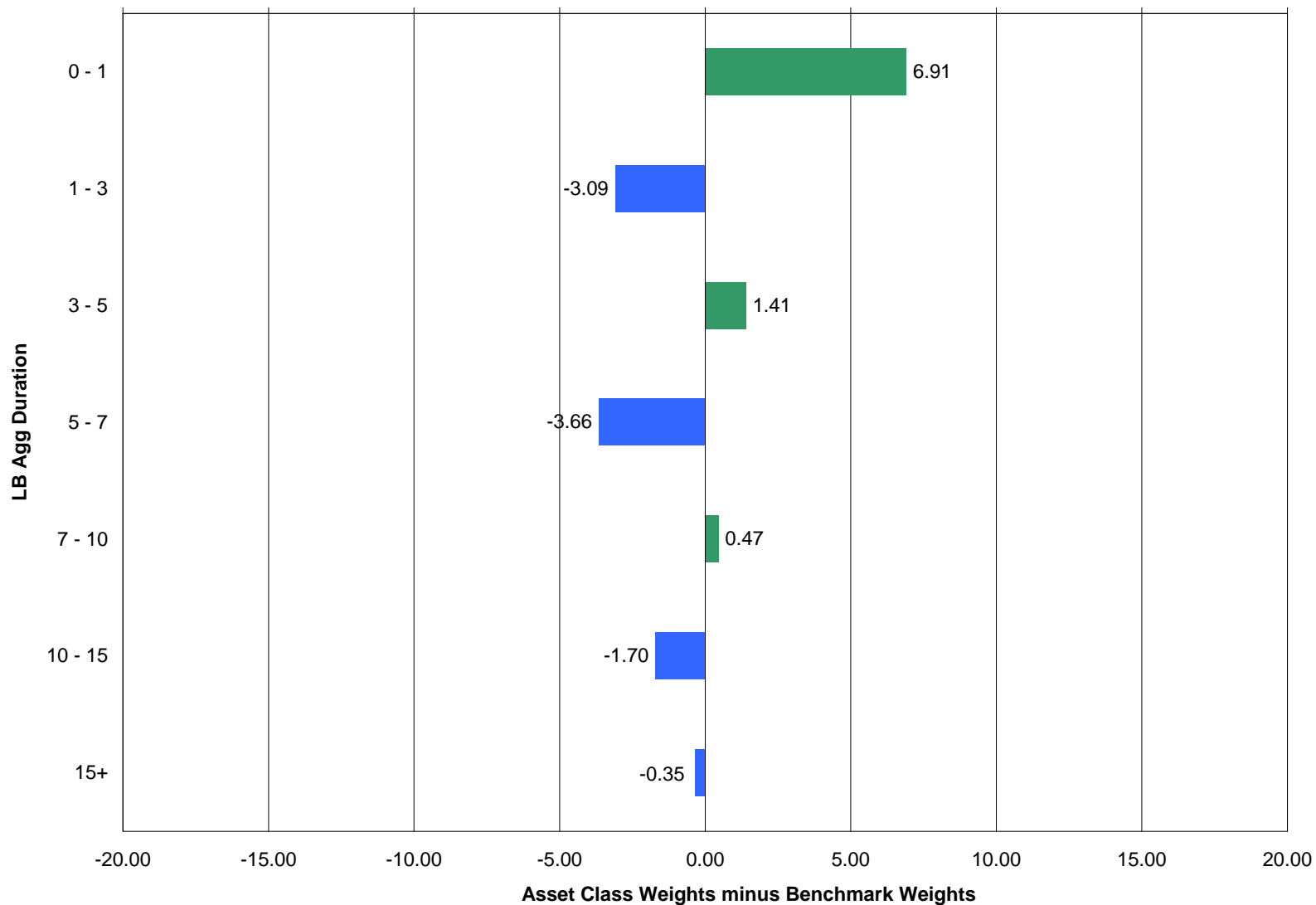


\*Aaa includes corporates, governments, Aaa securitized paper, and cash

# Positions: Portfolio Analysis – Duration Breakdown

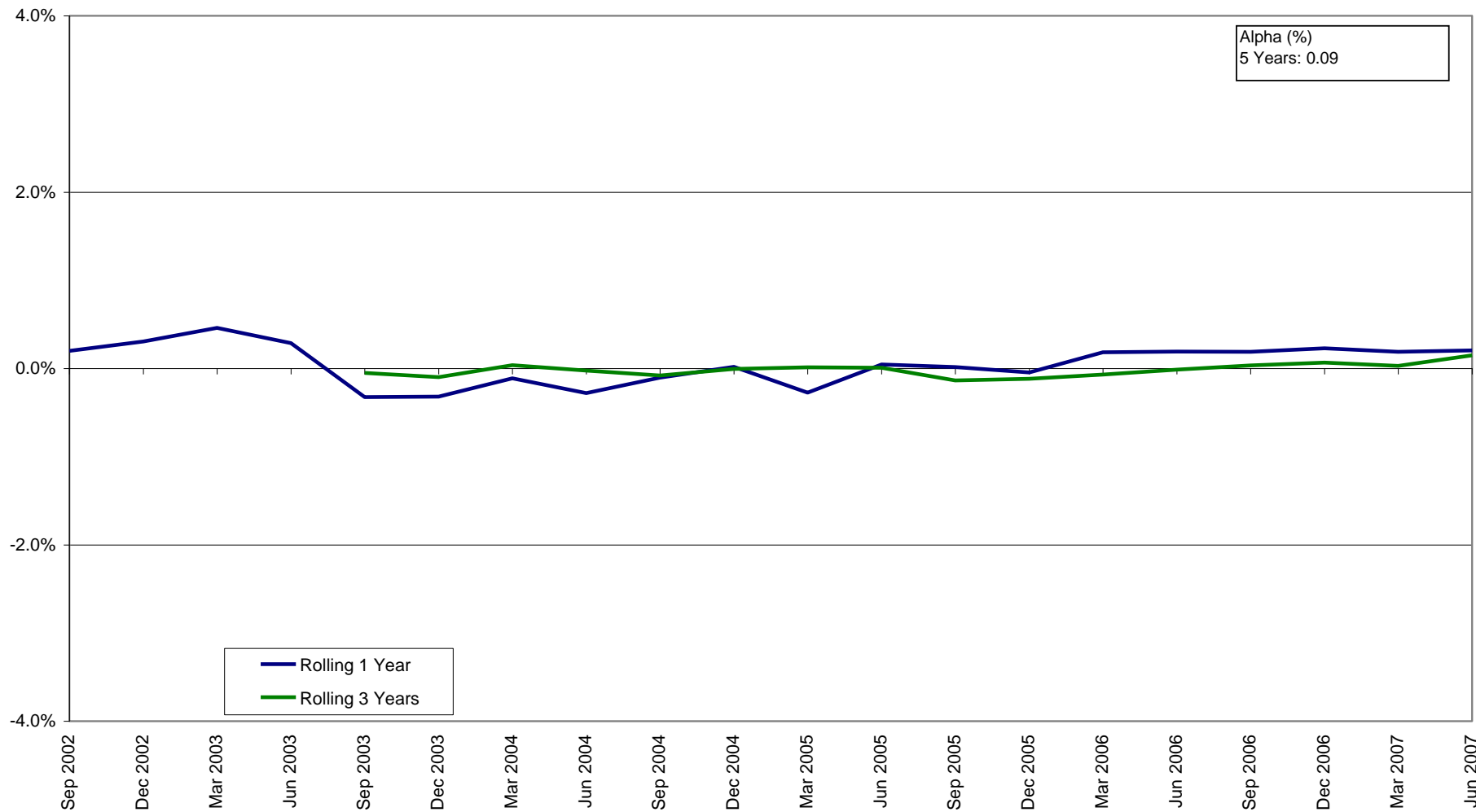
## JP Morgan Asset Management

As of June 30, 2007



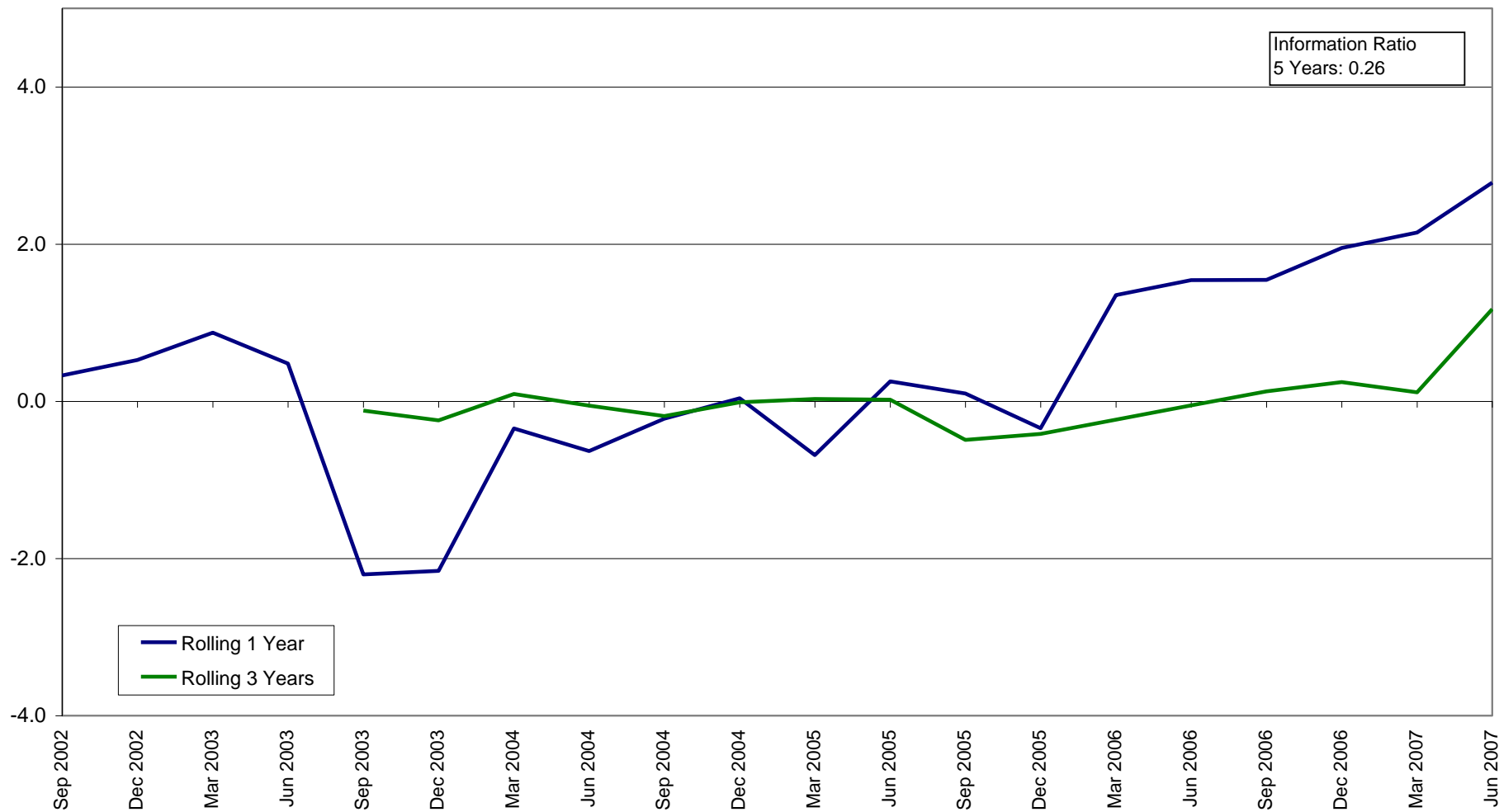
# Alpha F2 Model

For the 5-Year Period Ending June 30, 2007



# Information Ratio F2 Model

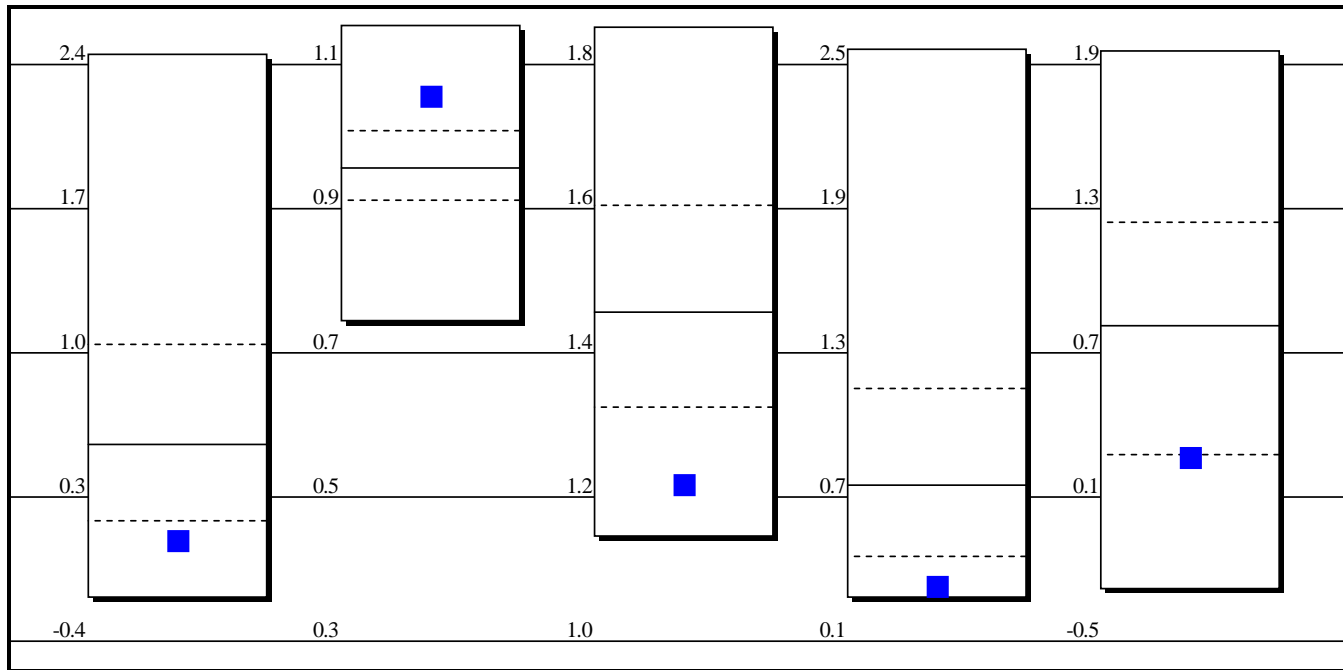
For the 5-Year Period Ending June 30, 2007



# Peer Comparison with the Mercer Fixed Core Universe

## F2 Model

For the 5-Year Period Ending June 30, 2007



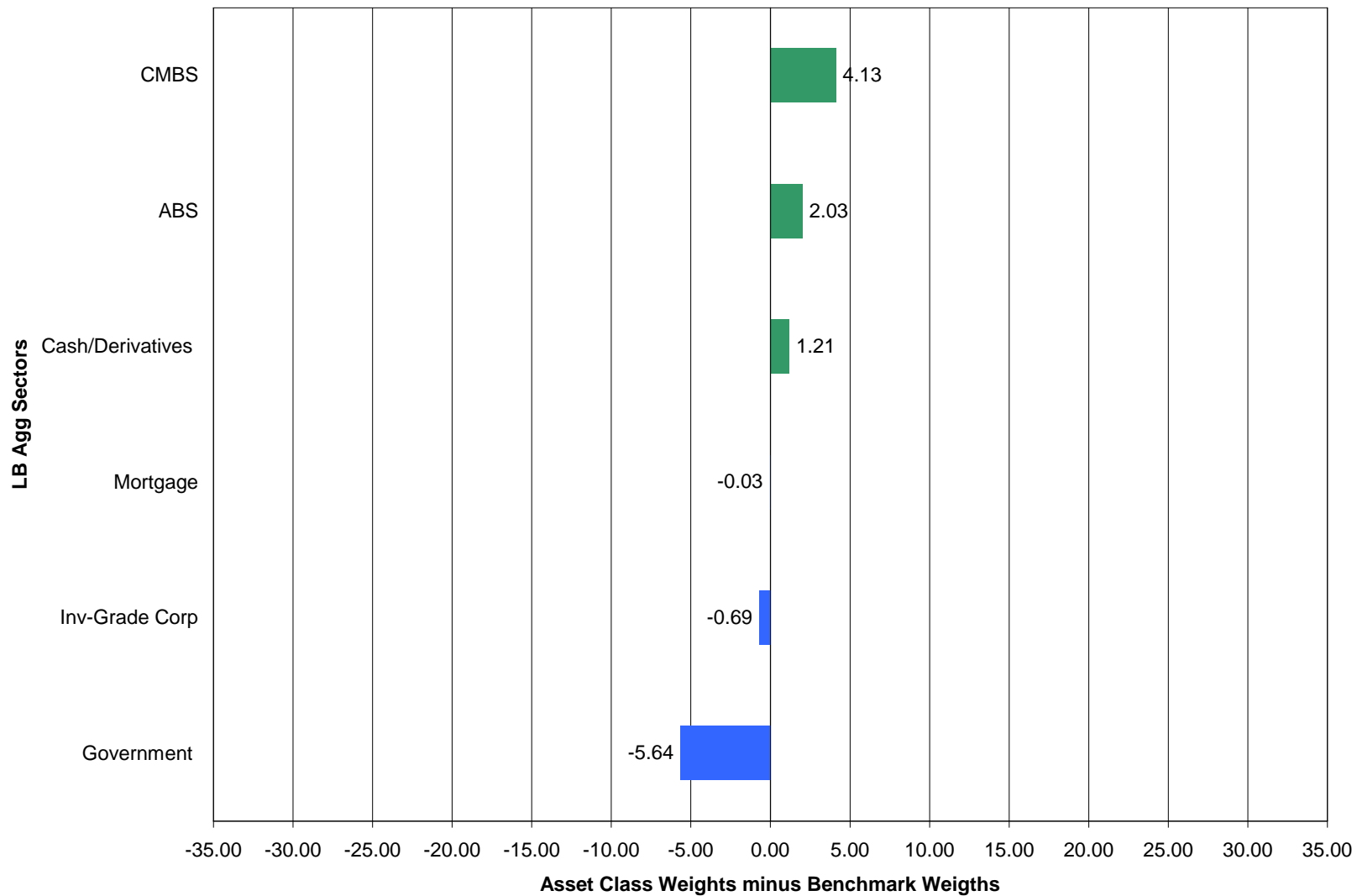
	Excess Return (% pa)	Beta	Reward to Risk	Tracking Error (% pa)	Information Ratio
ASRSF2	0.09 (82)	1.05 (16)	1.22 (89)	0.32 (91)	0.26 (76)
5th Percentile	2.45	1.15	1.85	2.56	1.95
Upper Quartile	1.04	1.01	1.60	1.15	1.24
Median	0.55	0.96	1.46	0.75	0.81
Lower Quartile	0.18	0.91	1.32	0.45	0.28
95th Percentile	-0.19	0.74	1.14	0.27	-0.29
Number of Funds	226	226	226	226	226



# Positions: Portfolio Analysis – Sector Allocation

## F2 Model

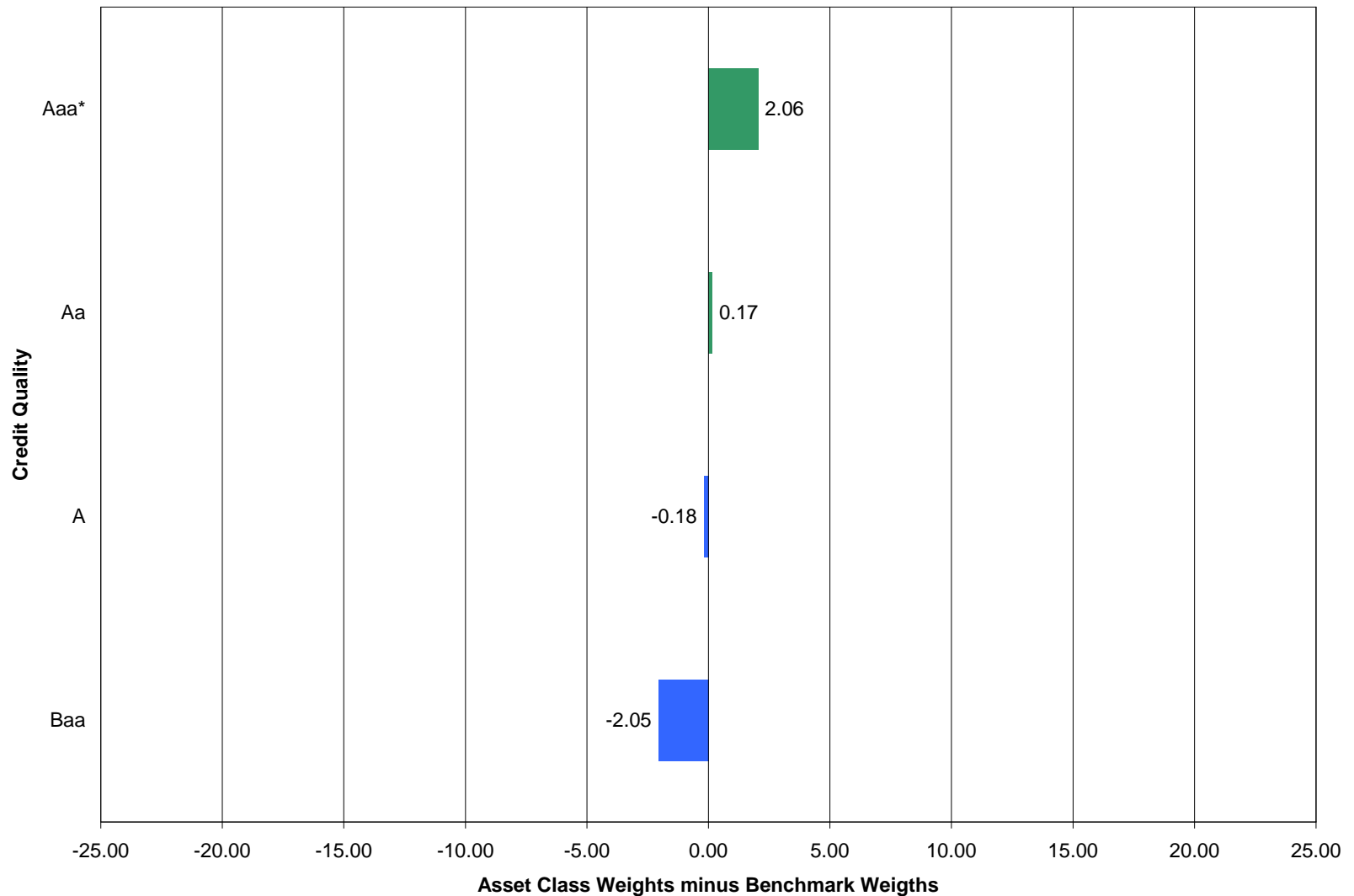
As of June 30, 2007



# Positions: Portfolio Analysis – Credit Quality

## F2 Model

As of June 30, 2007

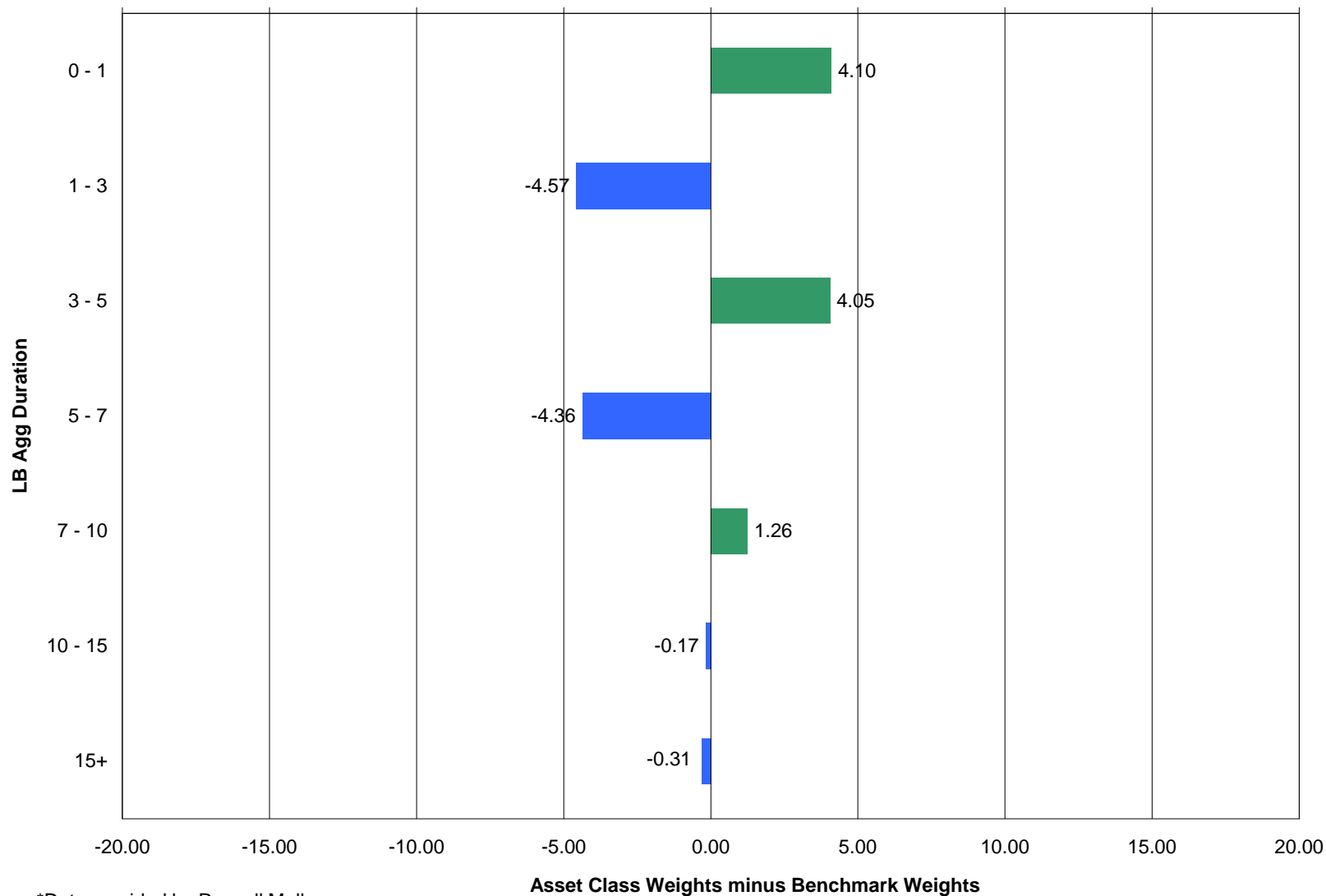


\*Aaa includes corporates, governments, Aaa securitized paper, and cash

# Positions: Portfolio Analysis – Duration\* Breakdown

## F2 Model

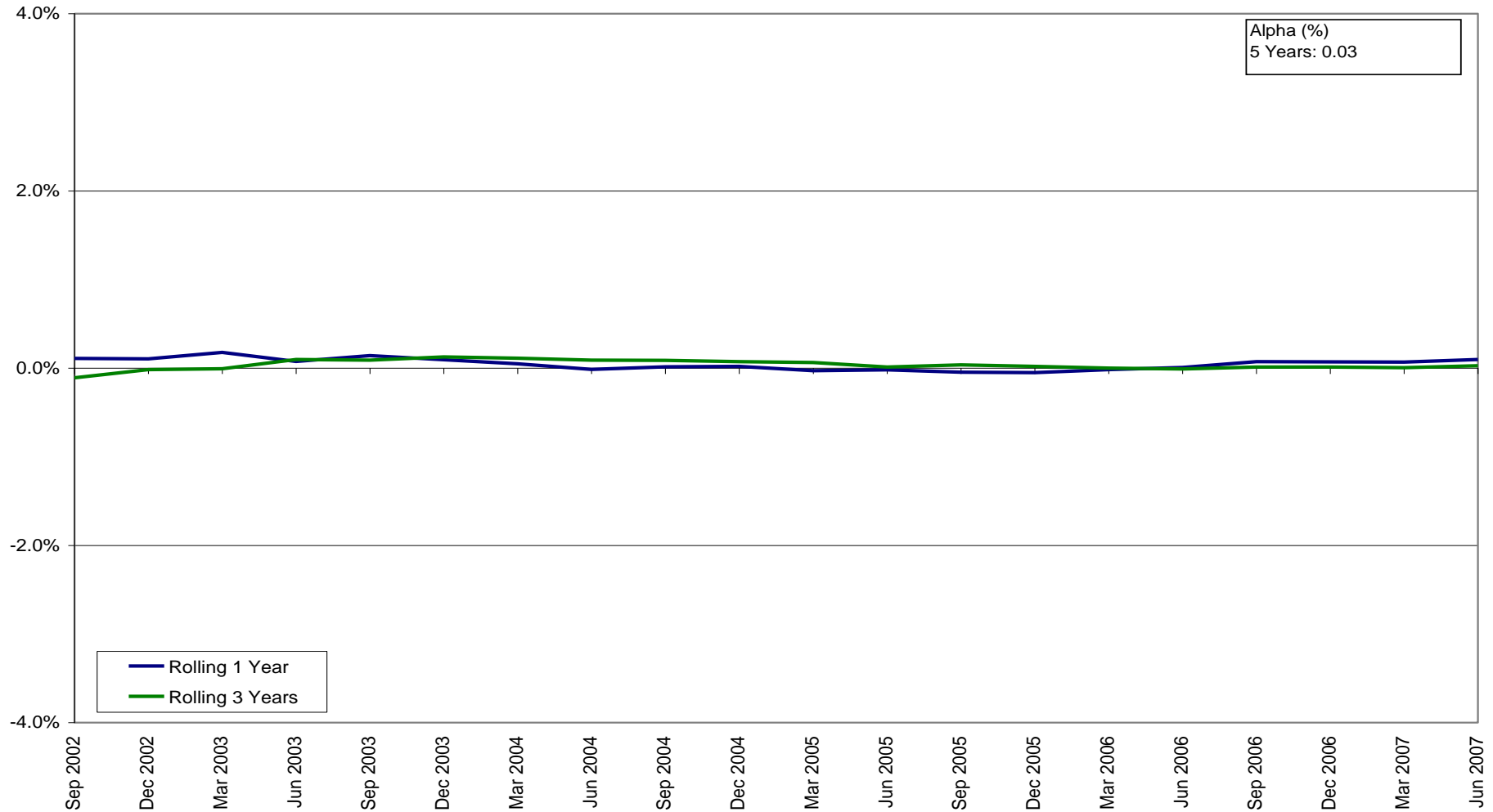
As of June 30, 2007



\*Data provided by Russell Mellon

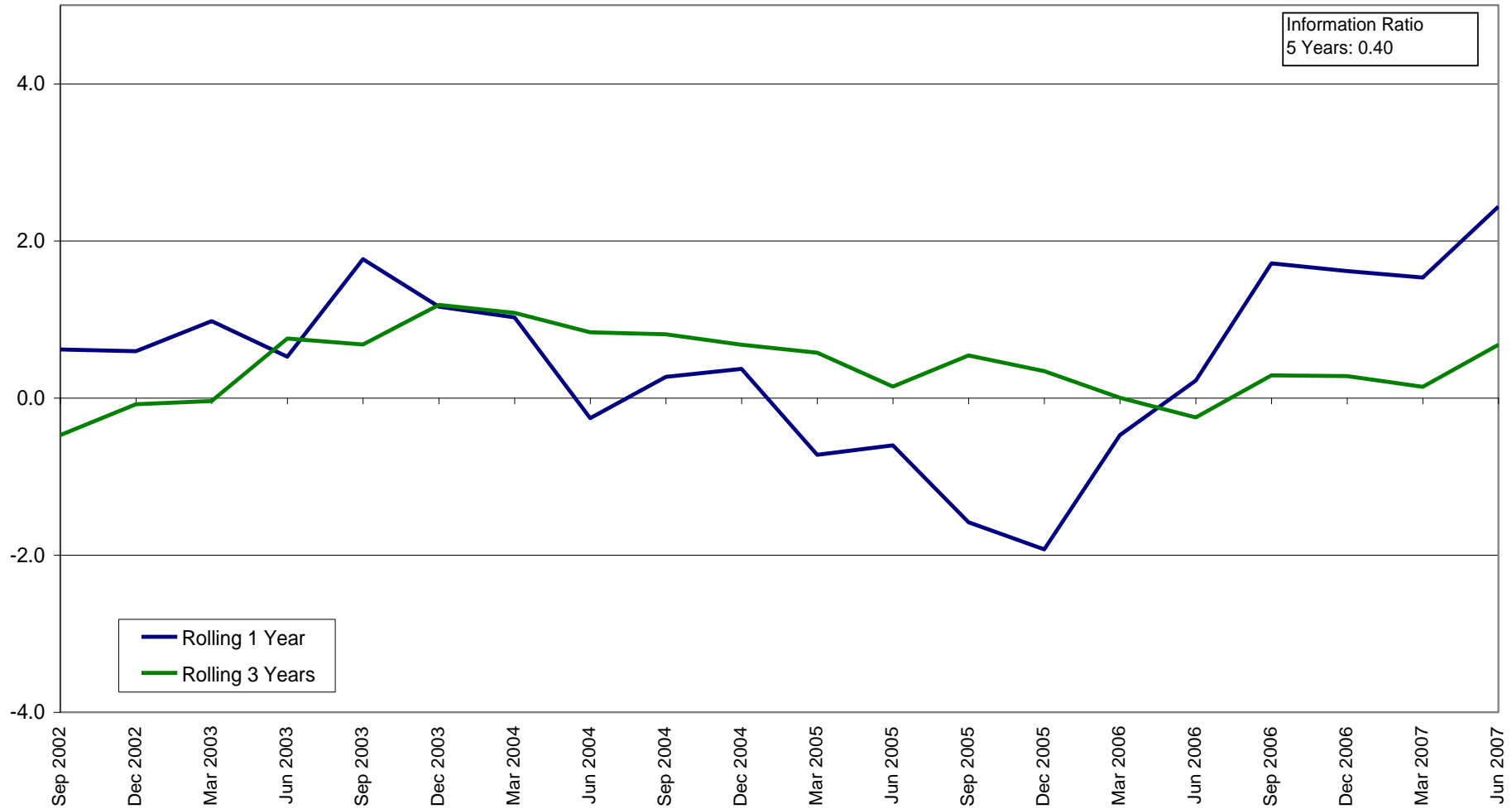
# Alpha BGI

For the 5-Year Period Ending June 30, 2007



# Information Ratio BGI

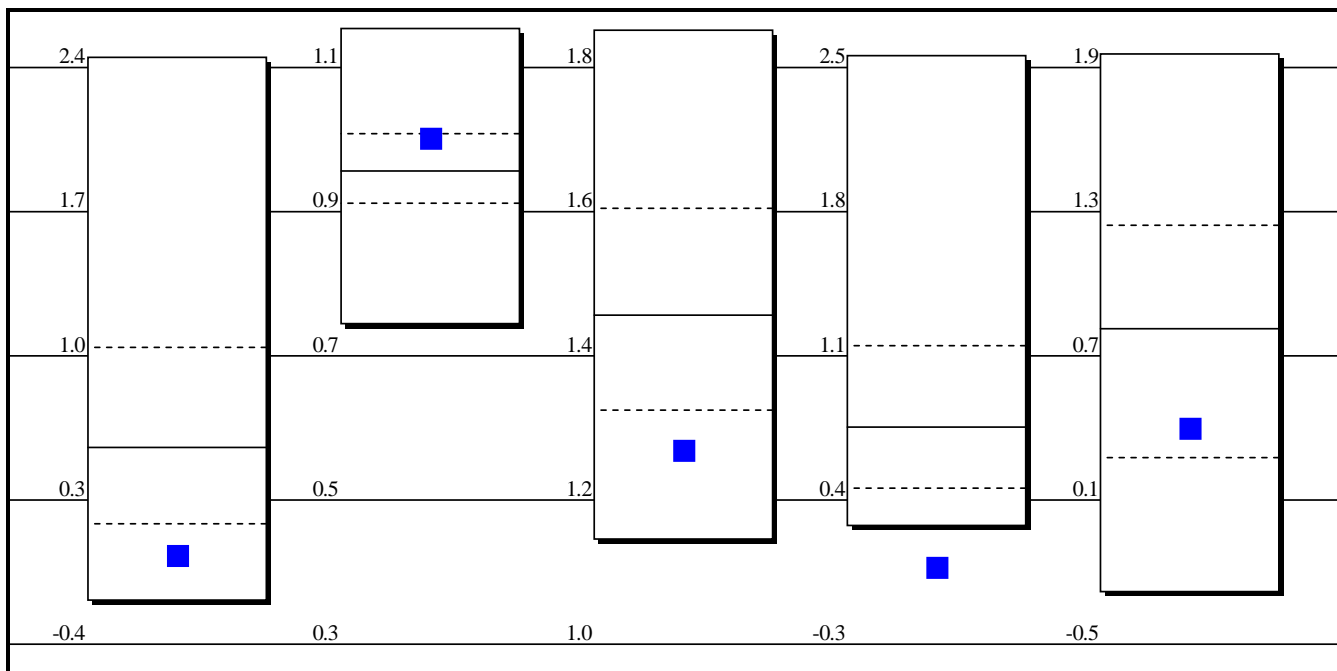
For the 5-Year Period Ending June 30, 2007



# Peer Comparison with the Mercer Fixed Core Universe

## BGI

For the 5-Year Period Ending June 30, 2007

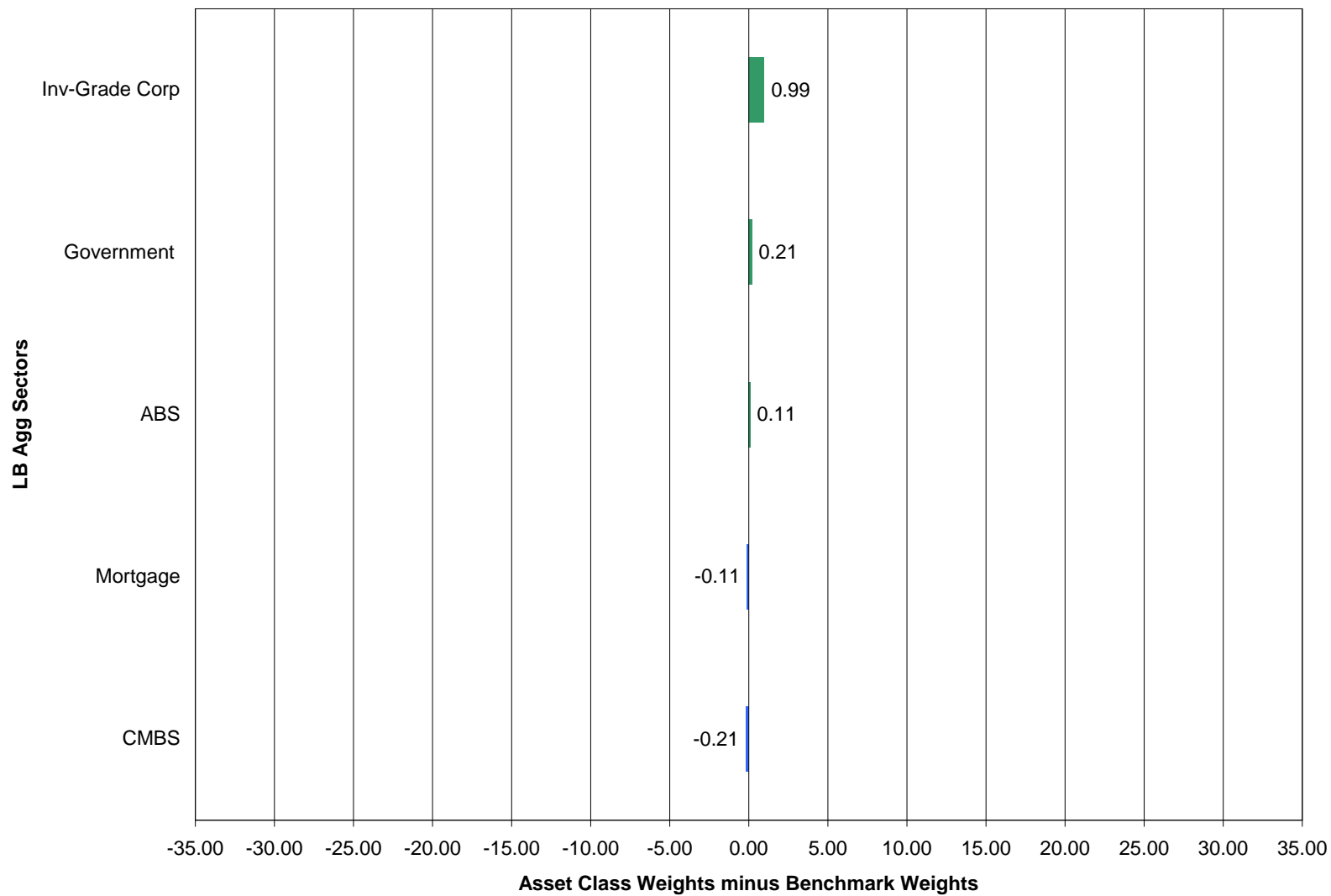


	Excess Return (% pa)	Beta	Reward to Risk	Tracking Error (% pa)	Information Ratio
BGI FI	0.03 (86)	1.00 (29)	1.27 (82)	0.07 (100)	0.40 (72)
5th Percentile	2.45	1.15	1.85	2.56	1.95
Upper Quartile	1.04	1.01	1.60	1.15	1.24
Median	0.55	0.96	1.46	0.75	0.81
Lower Quartile	0.18	0.91	1.32	0.45	0.28
95th Percentile	-0.19	0.74	1.14	0.27	-0.29
Number of Funds	226	226	226	226	226

# Positions: Portfolio Analysis – Sector Allocation

BGI

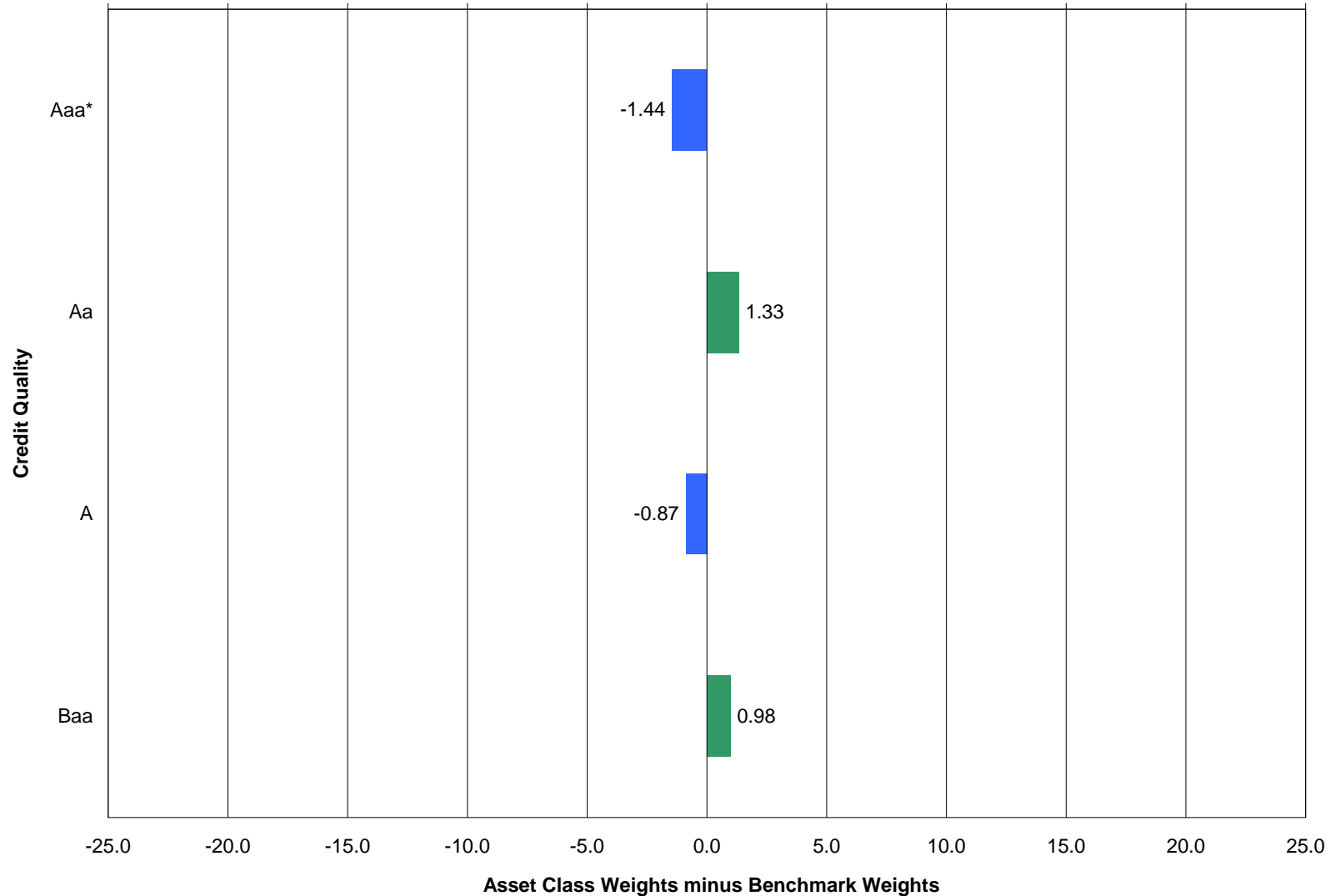
As of June 30, 2007



# Positions: Portfolio Analysis – Credit Quality

**BGI**

**As of June 30, 2007**



\*Aaa includes corporates, governments, Aaa securitized paper, and cash



# NOTES

**The information presented uses data provided by the individual managers as well as the reporting system Mellon Analytical Solutions used by Mercer Investment Consulting**

Sector and Quality allocations are provided by the respective managers while duration is provided by Mercer

These data are then combined using a weighted average to result in the Total Fixed Income Allocations